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# USSR Report

AGRICULTURE

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23 MAY 1986

USSR REPORT  
AGRICULTURE

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MAJOR CROP PROGRESS AND WEATHER REPORTING

SEED SITUATION FOR 86 CROP IN UKRAINE, MOGILEV OBLAST

Lvov Oblast

Moscow SELSKAYA ZHIZN in Russian 27 Oct 85 p 2

[SELSKAYA ZHIZN correspondent I. Germakovskiy report, Lvov, 26 [Oct]: "Studying the Experience of the Outstanding Workers"]

[Text] The All-Union Practical Seminar on Matters of Further Improving Seed Production for Grain and Oil-Bearing Crops and Grasses With the Agroindustrial Complex has come to an end here. The participants were acquainted with the experience of Zhidachovskiy, Zolochevskiy and Nikolayevskiy rayons in the industrial processing and storage of seed and its delivery to the farms.

There are 14 inter-farm varietal seed production enterprises in Lvov Oblast. It was noted that they prepared almost 30,000 tons of seed for planting last season. This was 66 percent of the total for these rayons. Labor outlays were 30-35 percent lower than was required for processing the seed on the kolkhozes and sovkhozes themselves, amounting to around two man-hours per quintal. The basic cost of the technical processing, including seed treatment and packaging, averaged 4 rubles. The quality was improved. All of the seed released to the farms met first-class planting standards; it had been coated and treated with physiologically active substances and trace elements.

Specialists with the Lvov Oblast Varietal Seed Production Association, together with the scientists, are working to universally organize the complete processing and bulk transportation of seed during the 12th Five-Year Plan. It is planned to achieve this in 15 of the oblast's 20 rayons in 1986.

Kharkov Oblast

Moscow SELSKAYA ZHIZN in Russian 4 Jan 85 p 1

[SELSKAYA ZHIZN correspondent N. Demikhovskiy report, Kharkov, 3 [Jan]: "The Seed is Being Readied"]

[Text] There are inter-farm seed cleaning plants in six rayons in the oblast. Each enterprise, located on some kolkhoz, prepares first- and second-reproduction planting stock for winter and spring grain crops. They

have powerful cleaning machines. The plants reliably store the seed stock in their own storage facilities and deliver it to the farms just prior to planting.

The basic cost of industrial preparation of the planting stock is half the cost of similar work performed separately on each farm. In view of this, the oblast has decided to increase the number of inter-farm seed cleaning enterprises to ten within the near future.

#### New Spring Grain Varieties

Moscow TRUD in Russian 8 Dec 85 p 1

[Text] Specialists at the All-Union Selection and Genetics Institute will make it possible to increase areas planted to high-yield varieties of spring grain crops in the new season. Yesterday they completed preparation of the wheat, barley and pea seed. A number of varieties will be planted for the first time on farms of the Far East and Kazakhstan. The conversion of seed production to an industrial basis helped to increase the output of planting stock.

#### Ukrainian Sowing

Moscow TRUD in Russian 18 Jan 86 p 1

[Text] The preparation of planting stock for spring crops has been completed on most of the Ukraine's farms. Mainly first-class seed of locally bred, high-yield varieties will be used for planting grain and pulse crops in the spring.

#### Mogilev Oblast

Minsk SELSKAYA GAZETA in Russian 19 Dec 85 p 2

[Report under the rubric "In the People's Control Committee of the Belorussian SSR": "Whatever the Approach, Such are the Results"]

[Excerpts] Questions about providing Mogilev Oblast farms with seed stock for the spring planting were discussed yesterday at a meeting of the People's Control Committee of the Belorussian SSR. It was noted that directors and specialists of agricultural administrations under the Mogilev Oblast Ispolkom, most of the rayispolkoms, the kolkhozes and sovkhoses did not ensure the meeting of targets for getting the seed stock for grain and pulse crops, flax and grasses into good planting condition in good time. In a number of cases this was caused by the irresponsibility of those in charge with respect to organizing the final preparation of the seed, and this important matter was left to proceed on its own. Permanent specialized teams were not set up at the grain threshing sites, and their work was not organized in two shifts on many farms. There was systematic failure to meet the schedules set for cleaning and testing the seed. The inter-farm and inter-rayon exchange of seed and the procurement of planting stock to make up for shortages have been slow.

As of 1 December of this year, only 65 percent of the quality-standardized seed for grain and pulse crops in the oblast was first-class seed. This is 14 percent below the average republic figure.

Due to poor local organizational work, lack of monitoring and reduced demand-ingness on the part of the agricultural administration of the Mstislavskiy Rayon Ispolkom, directors and specialists on the kolkhozes and sovkhoses were irresponsible with respect to preparing the seed stock. There have been violations of the technology for final processing of the seed. Only 38 percent of the seed for grain and pulse crops in the rayon was first-class seed.

The rayon's specialized seed farms sold the kolkhozes and sovkhoses 687 tons of untested seed and 490 tons which did not meeting the purity standards.

The agricultural administration of the Shklovskiy Rayon Ispolkom and the directors and specialists of many farms did not ensure the fulfillment of the requirement that preparation of the seed stock be completed by 1 December of this year; they did not provide a high level of labor intensity in this important area of the work and demonstrated unjustifiable sluggishness with respect to conducting the inter-farm and inter-rayon exchange of seed and procurement of seed to make up shortages. The work of putting the seed into planting condition is conducted at a poor organizational level on most of the kolkhozes and sovkhoses year after year. Only 46 percent of the seed for grain and pulse crops is first-class seed. There is no first-class seed for planting spring wheat for grain on 12 farms, none for pulse crops on 23, for oats on 12, and for barley on 3 farms.

A number of kolkhozes and sovkhoses have exaggerated the amount of seed stock laid in and included feed grain in their reports.

The leadership of the oblast varietal seed association and its local services are not having a significant influence upon the work of the specialized seed farms with respect to the timely preparation and delivery of high-yield seed to the farms and elimination of mismanagement and gross infractions of discipline.

As a result, the seed farms have prepared 11,800 tons of grain and pulse crop seed for sale. This is only 46 percent of the planned amount. The figure is only 7-15 percent in Goretskiy, Cherikovskiy, Krichevskiy and Chausskiy rayons. The specialized seed production farms, which have the best materials and equipment base, are nonetheless also not meeting their targets or schedules. As of 1 December of this year they had sold 6,500 tons of seed, or 25 percent of the planned amount. Seed which has not been quality-standardized is sold.

Varietal seed accounts for only 10,400 tons (18.2 percent) of the total quantity (57,100 tons) of seed from the 1985 grain harvest sold by the specialized seed farms to the state. The rest was commercial grain, even though it was high-yield seed.

Seed procurement for perennial grasses by the inter-farm enterprise is unsatisfactory. Only 1,105 tons (57 percent of the planned amount) has been procured, including 65 tons (10 percent) of the clover seed.

The meeting of the People's Control Committee of the Belorussian SSR stated that the work of preparing seed stock for the spring planting was unsatisfactory on the farms of Mogilev Oblast. Reprimands were issued to V. Chistyakov, deputy chief of the agricultural administration of the Mogilev Oblast Ispolkom, and G. Chusheva, chairman of the Mogilev Seed Production Association for Agricultural Crops, for failing to meet targets and for not monitoring the preparation of the seed. The meeting obtained their assurance that all of the seed for the spring crops will be brought up to good planting condition by 1 February 1986.

A stern reprimand was issued to A. Firago, chief of the agricultural administration of the Shklovskiy Rayon Ispolkom, and a reprimand was issued to G. Samonkova, deputy chief of the agricultural administration of the Mstislavskiy Rayon Ispolkom. The committee demanded that they take immediate steps to provide the farms with the missing quantities of high-quality seed. Comrades Chistyakov, Chusheva, Firago and Samonkova were ordered to explain to the collectives the reasons for the irresponsibility and report on steps taken to correct the deficiencies. It was noted that the directors and specialists at 13 farms on which serious deficiencies and padding of figures had been revealed have already been brought to accountability by the rayon people's control committees.

The people's control committees and groups were ordered to step up their control to see that the seed for the spring crops is put into good planting condition and preserved on each kolkhoz and sovkhoz, and to resolutely stamp out mismanagement and window dressing.

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CSO: 1824/217

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### BELORUSSIAN REVIEW OF SEED PREPARATION

Minsk SELSKAYA GAZETA in Russian 3 Dec 85 p 2

[Article: "At the Belorussian SSR Ministry of Agriculture"]

[Excerpts] Reviews of seed preparation at farms in a number of rayons in Vitebsk and Mogilev oblasts revealed serious shortcomings and oversights. For example, by the middle of November farms in Shklovskiy rayon were short 34,000 tons of oat seed, 17,000 tons of pulse seed, 97,000 tons of flax seed, 1,600 tons of seed potatoes and 21,000 tons of perennial grass seed. There are even greater shortages in Vitebsk Rayon. Seed preparation work for spring grain is only slowly under way and work on grass and flax seed is being delayed.

Only one-third of the grain and pulse crop seed tested in Shklovskiy Rayon were approved as first class.

As was noted in the order by the Belorussian SSR Ministry of Agriculture, the agricultural administrations in these rayons have not supported the organization of the timely stockpiling and proper preparation of seed, and the qualitative checking of materials. They have reduced the requirements made upon farm managers and specialists with regard to seed preparation for next year's spring planting. The work of the seed production groups in Vitebsk and Shklovskiy rayons was deemed unsatisfactory. Reprimands were given to their chief agronomists K. Sechinskiy and S. Pankratov. A. Firago, chief of the Shklovskiy Rayon Agricultural Administration and Ya. Shtukar, deputy chief of the Vitebsk Rayon Agricultural Administration were reprimanded for failure to control work, and for reducing the requirements made upon seed enterprises.

The Belorussian SSR Ministry of Agriculture has required that urgent measures be taken to overcome lagging and that work with seed stocks be taken under operational control

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### SEED PROGRESS IN BELORUSSIA SURVEYED IN DECEMBER

Minsk SELSKAYA GAZETA in Russian 11 Dec 85 p 1

[Article, under the "Operational Survey" rubric: "Seed for the Future Harvest"]

[Excerpts] To get ready for the future harvest means to begin with the preparation of good seed. Following this behest, many kolkhozes and sovkhoses have done good work with seeds for spring grain and pulse crops and are completing flax and grass seed cleaning.

There are 1,194 farms in the republic which have full quantities of first class seed for spring grain and pulse crops to be planted for grain. There are complete stockpiles at farms in Gantsevichskiy, Drogichinskiy, Prizhanskiy, Lyakhovichskiy, Gomelskiy, Smorgonskiy and other rayons.

However, seedstock preparations for the spring harvest are not everywhere satisfactory. Farms in Vitebsk and Mogilev oblasts are working below their potentials.

Farms in Mogilev Oblast have a total of 7,300 tons of uncertified seed for spring grain and pulse crops, farms in Vitebsk Oblast -- 6,500 tons, in Gomel Oblast -- 1,300 tons and Minsk Oblast -- 800 tons. As a result, many farms in these oblasts have low supplies of class I seeds.

The growth in first class grain seed in the republic during the week from November 25 to December 2 was 8 percent, in Gomel Oblast -- 7 percent, in Grodno Oblast -- 6.8 percent and in Minsk Oblast -- 3 percent. During this period there were practically no improvements in seed quality at farms in Kirovskiy, Slavgorodskiy, Lepelskiy, Myadelskiy and Kopylskiy rayons.

It should be noted that there was somewhat of an improvement in the varietal and reproduction class composition of grain and pulse seed for the 1986 planting. Regionalized and promising varieties account for 98 percent of the seed stock. However, at farms in Mogilev Oblast only 51 percent of the buckwheat seed is regionalized and in Gomel Oblast 78 percent. More than 50 percent of the pea varieties at farms in Brest, Grodno and Gomel oblasts are unregionalized. The reproduction class composition of peas is slowly being

improved at farms in Mogilev and Gomel oblasts, and that of pulse seeds at farms in Brest Oblast.

The situation needs to be corrected on time. It is necessary to make maximum use of all available air tables, electromagnetic machines and the released capacity of flax seed stations and interfarm enterprises. Growers must accelerate their choice of seed from special seed farms and experimental bases and organize the additional cleaning of batches of class II and III spring grain and pulse seed and uncertified flax and grass seed.

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SEED PREPARATION COMPLETED IN BELORUSSIA

Moscow SELSKAYA ZHIZN in Russian 14 Dec 85 p 1

[Article: "For the Spring Field"]

[Text] Preparations of first class seed for spring planting have been completed by farms in Belorussia. Tests show that the germination rate is almost 100 percent. Farmers thoughtfully stocked up on seed with differing ripening times. If spring is late, early ripening varieties will be planted, while if spring is early, varieties with prolonged vegetative growth will be used.

Highly productive intensive type varieties, bred by plant breeders in the republic have been chosen and propagated. They are well adapted to local soil-climatic conditions and give high yields. These include: Zhodinskiy-5 and Zazerskiy-85 barley, guaranteing 4-5 quintal per hectare increases in yields, Bug oats, the yields of which exceeded 60 quintals per hectare during tests. Scientists have delineated 24 soil-climatic zones in the republic and have selected the most productive varieties for each of them.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

SEED QUALITY WORK SURVEYED IN JANUARY

Minsk SELSKAYA GAZETA in Russian 11 Jan 86 p 1

[Article, under the "Operational Survey" rubric: "What Quality Seed?"]

[Excerpts] According to the schedule set for kolkhozes and sovkhoses by agricultural organs, it is necessary, no later than January 1, to completely prepare high quality seed material for the forthcoming spring planting. How are farms handling this task and how much available seed meets the required standard?

These questions cause no concern at farms in Stolinskiy, Pruzhanskiy, Lyakhovichskiy, Braginskiy, Narovlyanskiy, Rechitskiy, Slonimskiy, Smorgonskiy, Iyevskiy, Vileyskiy, Bobruyskiy, Gluskiy and Slutskiy rayons. Here they are diligently improving seeds to high planting conditions. Only the most carefully chosen, heaviest seeds are used. Ninety to 95 percent of the spring grain and pulse crop seeds belong to the first planting standard class. There are enough flax and perennial grass seeds for the spring planting. Specialized elite farms are completing their sales [prodazha] of planting material.

One should note the extensive work done at the Ustye Experimental Base in Orshanskiy Rayon, where all the 11,700 quintals of seed were first class. The state farm [goskhoz] is completing sales [realizatsiya] to Vitebsk kolkhozes and sovkhoses.

In general the schedule for preparing high quality seed for the spring planting plan is being met in Minsk, Brest and Gomel oblasts.

However, the majority of farms in Vitebsk and Mogilev oblasts and some sovkhoses and kolkhozes in Minsk and Grodno oblasts are only slowly making up previous lagging.

There should be special mention of republic elite farms subordinate to Belsortsemobyyedineniye [Belorussian Varietal Seed Association]. This year many of them are working with seeds below their potential. It is paradoxical, but a fact: agronomists at a number of kolkhozes and sovkhoses in Shumilinskiy, Gorodokskiy, Beshenkovichskiy, Ivatsevichskiy and other rayons had to turn to suppliers, and are looking for elite seeds from outside only because they were

let down by Bel'sortsemobyedineniye farms. In particular, the Ostrovno Experimental Base in Beshenkovichskiy Rayon does not have a single kilogram of certified seed among the 250 quintals of seed stockpiled for sale. About 40 percent of the seed checked at the Podberesye Educational Farm in Vitebsk was not certified, the same applies to 125 quintals of seed material at the Teshevlya Experimental Base in Baranovichskiy Rayon. Many Minsk farms are waiting in vain for seed from the Zhodino Experimental Farm in Smolevichskiy rayon. Three hundred fifty quintals of spring grain seed at this goskhoz were rejected as uncertified. Last autumn 200 quintals of alfalfa seed at the Kolkhoz imeni Kalinin in Pinskiy Rayon were mixed with other seeds. They have not yet been cleaned. Four hundred quintals of seed material at the Partizanskiy Kray Kolkhoz and 500 quintals of pulse seed at the Porozovskiy Sovkhoz in Svislochskiy Rayon are in the same condition. At the Experimental Base imeni Shmyrev, Vitebskiy Rayon, there are 1,750 quintals of elite seed unprepared for sprouting.

Many farms in Minsk Oblast did not meet their plans for buckwheat production in the 11th Five-Year Plan. They are now poorly preparing planting material for this crop. At the Berezina Kolkhoz in Berezinskiy Rayon 99 quintals of buckwheat seed are uncertified for sprouting. At the Krasnoye Znamya and Komintern Kolkhozes in Dzerzhinskiy Rayon, 94 quintals are contaminated by weed seeds and last year's chaff. Buckwheat seed is mixed with other crop seed at the Bolshevik Kolkhoz and the Bobr Sovkhoz in Krupskiy Rayon. The cleaning of weeds from planting material is put off for "later" at the Kolkhoz imeni Lenin, the Pobeda Kolkhoz and the Pleshchenitskiy Sovkhoz in Logoyskiy rayon.

Time brooks no delay. Progressive farms in the republic, where there are planned amounts of first class seed, are preparing for the timely chemical decontamination of planting material, and are planning to expand the planting of spring grain crops grown by intensive technology. When will the lagging farms do this? Delays in bringing seed up to first class planting standard are fraught with the danger of low yields.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### BELORUSSIAN CROP REGIONALIZATION PROGRESS

Minsk SELSKAYA GAZETA in Russian 5 Feb 86 p 2

[Article by K. Tychina, BELTA [Belorussian Telegraph Agency] observer: "A Field of New Hopes"]

[Text] For each variety its own field. Every farm in the republic is entrusted with fulfilling this scientifically based requirement. The BSSR Agro-industrial Complex has approved additional measures to intensify grain growing.

Special attention is given to varieties -- the basis for obtaining high yields. Previously they were regionalized by oblast -- some were for only one oblast, while others were for several or even the entire republic. However, as research shows, this principle does not exhaust varieties' yield power. After all, no two fields are alike -- either with regard to soil composition, terrain or microclimate.

Through the joint efforts of scientists in republic scientific-research institutes, farmers, soil scientists and agrochemists, as well as the Central Scientific Research Institute for the Mechanization and Electrification of Agriculture in the Nonchernozem Zone an analysis was made of each field and each description [sostavniy pasport] indicating the type of soil, productivity and other feature.

Many fields are similar. This is why 24 soil-climatic zones were delineated. There was an equally careful study of the potentials of grain varieties. It was determined on which soils they thrive, and the conditions under which they can manifest the greatest yields were listed. Agronomists at farms now only have to select which varieties should be planted on a given field and monitor the strict implementation of growing techniques.

Seed growing farms assumed the obligation of quickly propagating promising varieties, and changing varieties every 4-5 years. Educational fields at agricultural VUZ's and tekhnikums are of help here. By spring planting time in the first year of the new Five-Year Plan there will be reserves of grain varieties with different maturing times: In case of a late spring, early maturity varieties will be planted, while if spring is early, varieties with prolonged vegetative growth periods will be used.

They are well adapted to local soil-climatic conditions and give high yields. These include Zhodinskiy-5 and Zazerskiy-85 barley, which guarantee yield increases of 4-5 and more quintals per hectare, and Bug oats, the yields of which exceeded 60 quintals per hectare during tests. A number of foreign bred intensive varieties have been selected. Scientists have developed techniques for obtaining high yields. By the end of the five-year plan it is intended to increase the area in which new technology is used to 1 million hectares, the same amount of land will be used for growing barley.

Potato, flax and grass varieties have been selected for each field. The best cropping structure for pulse crops has been discovered.

Each hectare of crop land, meadow and pasture is strictly monitored. Maximum yields should be obtained. For the beginning of the five-year plan the republic's farmers have been given the problem of obtaining grain yields in the 35-40 quintal per hectare range and to increase the production of grain and other crops to the levels called for by the Food Program.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### ESTONIAN SEED PREPARATIONS SURVEYED

Tallinn SOVETSKAYA ESTONIYA in Russian 14 Dec 85 p 1

[Article by R. Valdma: "Seed for the Spring Field"]

[Text] Grain growers justifiably call seed the "Golden source of the harvest". What is the seed stock situation in our republic? We directed this question to Aad Pyartelyu, chief of the republic Seed Inspectorate.

The reserves of grain and pulse crop seeds are somewhat greater than the plan. However, this has not limited grain growers' concern about planting stocks. The main thing is to give seeds a vital force and to put them in a condition which will assure the greatest yields from each hectare next year.

On the average in the republic, 94 percent of the seed reserves have been improved to planting condition, 78 percent of the total volume in in class I or II. Five rayons -- Vilyandiskiy, Kingisepskiy, Kokhtla-Yarveskiy, Paydeskiy and Kharyuskiy are completely supplied with high class seed.

Unfavorable weather during harvest has an effect upon seed quality. Nevertheless, in each rayon there are farms which have reliably supplied themselves with enough and more than enough excellent seed stock. However, there are also those where is are not enough good seed, for example the Tali and Syade Sovkhozes in Pyarnuskiy Rayon, the Lakhmuse and Kamara Sovkhozes in Vilyandiskiy Rayon, the Kaarepere Sovkhoz and the Lembiru Kolkhos in Igyevaskiy Rayon. Therefore, it is necessary to redistribute seed within rayons so that by the end of the year all are supplied with high quality seed.

The preparation of perennial grass seed is also very important. How is the situation here?

The plan calls for the procurement of 2,953 tons of perennial grass seed. Today 2,786 tons, or 94 percent, is in storage. As only 558 tons have been subjected to quality analysis, it is too soon to make generalizations. However, even now it is clear that grass seed is heavily weed infested this year. It will take quite a bit of time to clean it and bring it up to condition. While in general we have enough seeds for cereal crops, in many places there are not enough pulse crop seeds. Therefore, we should carefully look at carry-over stocks of these seeds.

MAJOR CROP PROGRESS AND WEATHER REPORTING

SEED QUALITY IMPROVEMENT IN IVANOVO OBLAST

Moscow SELSKAYA ZHIZN in Russian 18 Dec 85 p 1

[Article by I. Antonov: "Improving Seed Quality"]

[Text] Grain crop seeds have been improved to high planting conditions at the majority of farms in Gavrilovo-Posadskiy Rayon, including the stud farm, the Zarya, imeni Dzerzhinskiy, Svoboda, Rodina and Rassvet Kolkhozes and the Gavrilovo-Posadskiy Sovkhoz.

Local farmers are well aware of seed's importance in the overall complex of agricultural techniques. Therefore, grain from the better sections which is, as a rule, harvested by the separate method, is used for seed material.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### IMPORTANCE OF IVANOV SEED WORK

Moscow SELSKAYA ZHIZN in Russian 7 Feb 86 p 1

[Text] Last year workers at the Rossiya Kolkhoz in Shyuskiy Rayon obtained 37 quintals of grain or 250 quintals of potatoes per hectare, among the highest indicators in the oblast. This achievement is, above all, due to well organized seed work at the farm. Only regionalized varieties are planted, being carefully sorted and improved to good planting condition. All crops have good seed material.

Other farms in the rayon are also being responsible about seeds, and this is having good results.

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CROPS IN CHEBOKSARSKIY MEET PLANTING REQUIREMENTS

Moscow SELSKAYA ZHIZN in Russian 13 Dec 85 p 1

[Article by L. Alekseyev: "The Seed is Ready"]

[Text] Chuvash field workers are laying a strong foundation for future yields. All seed has been brought up to good condition at farms in Shumerlinskiy Rayon. The creation of specialized around-the-clock brigades for sorting machines helped accelerate the preparation of planting material.

Seeds for spring crops at farms in Yalichikskiy, Cheboksarskiy and other rayons completely meet planting standard requirements.

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USTINOV SEED PREPARATION COMPLETED

Moscow TRUD in Russian 24 Jan 86 p 1

[Article]

[Text] Seed preparation work has been completed at farms in Udmurtiya. All of the stocks planned for this purpose have been improved to the highest planting condition. They are almost completely the most promising regionalized varieties.

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TAMBOV SEED PREPARATION BEGUN BY TRAIN GROWERS

Moscow TRUD in Russian 11 Feb 86 p 1

[Article]

[Text] Selected seed of regionalized varieties of pulse crops has been prepared for spring planting by grain growers in the oblast. Two-thirds of the seed have been brought up to highest condition and the rest to second class. Provisions have been made for reserve stocks at all farms. These successes have been attained because farmers working by collective contract have assumed responsibility for the grain fields.

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IMPROVED GRAIN PRODUCTION IN VORONEZH

Moscow SELSKAYA ZHIZN in Russian 7 Dec 85 p 1

[Article by A. Katkalov: "Good Seed"]

[Text] Until quite recently the Kolkhoz imeni Krupskaya in Ternovskiy Rayon had seed of the lowest quality, but now it is all first class. What has happened? The farm acquired new, improved grain cleaning equipment, management and specialists, in other words, it turned its face to the golden stocks of the harvest. This created the results.

According to seed inspectorates, for the oblast as a whole, grain planting for harvest-86 was much better than last year, 98 percent of the seed is in first and second class. Seed in first class ranges from 90 to 97 percent in rayons such as Kalacheyevskiy, Repyevskiy, Petropavlovskiy and Kashirskiy.

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NOVOSIBIRSK PLANTING PREPARATIONS UNDER WAY

Moscow SELSKAYA ZHIZN in Russian 15 Feb 86 p 1

[Article: "Thorough and Responsible"]

[Text] Farmers in the oblast are making thorough and responsible preparations for spring. Many kolkhozes and sovkhoses have now completed sorting and testing seed for planting quality. Farms in Ordynskiy, Dovolenskiy and Karasukskiy rayons have already prepared more than 80 percent of their planting material in the first and second class. For the entire oblast the figure is two-thirds. This is considerably more than last year.

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PLANTING PREPARATIONS UNDER WAY IN ULYANOVSK OBLAST

Moscow SELSKAYA ZHIZN in Russian 28 Jan 86 p 1

[Article by M. Belousov: "To First Class"]

[Text] Farm workers in Ulyanovskiy Rayon are competing to obtain yields of at least 25 quintals per hectare in 1986. They are implementing a set of agronomical measures to assure this. Among these an important place is given to preparation of planting material. Special links have been set up at all farms and are working at high pressure rates. Almost 90 percent of seeds for grain and pulse crops have already been improved to first class and the remaining to second. First class seed has been supplied to the Kolkhoz imeni Ulyanov, the Zavety Iliche Sovkhoz and others.

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WINTER CROP SEED WORK IN LIPETSKIY RAYON

Moscow SELSKAYA ZHIZN in Russian 1 Feb 86 p 1

[Article by G. Kolenchuk: "With Special Concern"]

[Text] At kolkhozes and sovkhoses in Lipetskiy Rayon winter wheat from seeds only in the first class of high reproductions was grown on more than 13,000 hectares by intensive technology last year and gave good yields.

During these winter days special links at farms are giving extra concern to the completion of seed preparations for harvest. At the Znamya Lenina, imeni Lenin and imeni Frunze Kolkhozes almost all the grain and pulse seeds have been improved to first class. The majority of farms are completing seed treatment.

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SEED READY IN VOROSHILOVGRAD OBLAST

Moscow SELSKAYA ZHIZN in Russian 21 Feb 86 p 1

[Article: "Seed is Ready"]

[Text] Farmers in Voroshilovgrad Oblast have completed the preparation of grain and pulse seeds for spring planting. All planting material meets first class requirements. The reserves of Odessa-100 spring barley have been increased at farms. This midseason maturing variety produces almost 55 quintals of grain per hectare. Grain growers in Donetsk, Zaporozhye and a number of other oblasts have also stored high quality planting material for spring crops.

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KHMELNITSKIY OBLAST SEED INSPECTED

Moscow SELSKAYA ZHIZN in Russian 14 Feb 86 p 1

[Article by V. Kazimir: "Inspection Completed"]

[Text] At Podoliya, specialists from the Oblast State Seed Inspectorate and its local services first used a new method for inspecting and preparing planting material. Seed quality was determined by its growing energy, by its suitability for rapid and sudden sprouting and for intensive development in field conditions. The new method also determines suitability for long term storage.

The inspection showed that all seed, including reserve stocks, has been improved to high planting condition. For the first time in a long time in the oblast the plan for storing planting material for perennial grasses has been overfulfilled. Work is continuing on bringing it up to required condition.

Massive surprise inspections have now begun at farms which are preparing for entering the fields. These revealed that thanks to the efforts of society and people's controllers, there was no planting material spoilage in the oblast.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### GRAIN CROP DEVELOPMENTS IN NON-CHERNOZEM ZONE DISCUSSED

Moscow ZAKUPKI SELSKOKHOZYAYSTVENNYKH PRODUKTOV in Russian No 11, Nov 85 pp 4-5

/Article by P. Tolstopyatenko, chief of the State Inspection for Procurements of Grain and Seed for Oil-Bearing Crops of the RSFSR Ministry of Procurements: "Grain of the Non-Chernozem Zone"/

/Text/ The non-chernozem zone is an ancient region of Russia. It consists of 29 oblasts and autonomous republics in which more than 60 million persons reside. Today it is a very large industrial region in which almost one fourth of the country's industrial potential is concentrated. It is one of the largest agricultural regions and one which plays an important role in ensuring that the population is supplied with food products and industry with raw materials. More than 10,000 kolkhozes, sovkhoses and other goskhoses /state farms/ in the non-chernozem zone produce one fifth of the grain in the RSFSR, more than one half of the potatoes, almost all of the flax, two fifths of the vegetables and milk and many other agricultural products.

In June of this year, the CPSU Central Committee and the USSR Council of Ministers adopted the decree entitled "Further Development of and Improvements in the Effectiveness of Agriculture and Other Branches of the Agroindustrial Complex in the Non-Chernozem Zone of the RSFSR During the 1986-1990 Period."

As a result of measures undertaken by the party and government over the past decade, following the adoption of the well known decree concerning the non-chernozem zone, more than 74 billion rubles worth of capital investments, or more than the preceding period by a factor of 2.2, were employed for agricultural development in the zone in terms of an entire complex of operations. This made it possible to expand land reclamation operations, to increase the acquisition of equipment and to accelerate considerably the construction of roads, schools, pre-school institutes, clubs and medical facilities. The fixed productive capital of kolkhozes and sovkhoses increased twofold.

The logistical base for procurement organizations and the processing industry underwent further development. Construction was completed on dozens of meat combines and large creameries, vegetable-potato storehouses and enterprises for the primary processing of flax. Thirty five modern mixed feed plants equipped with a leading technology were built. The capacities of grain storehouses -- especially of the elevator type -- were increased considerably. A powerful grain-drying and grain-cleaning economy was created at all of the grain-receiving

and processing enterprises. All of this had a positive effect on the status of agricultural production and on fulfillment of the state procurement plans for agricultural products.

Today there are a greater number of farms and rayons in the non-chernozem zone which are making effective use of state assistance and which have raised noticeably their agricultural crop yields. In each oblast and autonomous republic, there are many farms which are obtaining 30-40 or more quintals of grain per hectare.

Persistent and laborious work is being carried out at the Kolkhoz imeni 50-Letiya SSSR in Kostroma Oblast based upon the introduction of leading technologies. This is making it possible to obtain stable grain yields of 40-43 quintals per hectare and to fulfill on an annual basis the contractual obligations for selling grain to the state. An even higher yield was obtained at the Vologda Rodina Kolkhoz -- 50-55 quintals. In 1984 the Pskov Pobeda Kolkhoz and Belorusskiy Sovkhoz obtained a yield of 32-35 quintals per hectare. Last year, a yield of 34 quintals of grain was obtained at the Kolkhoz imeni Gorkiy in Pravdinskiy Rayon in Kaliningrad Oblast. At the Kanash Kolkhoz in Kanashskiy Rayon in the Chuvash ASSR, an average yield of 37 quintals of grain per hectare was obtained from the overall sown area during the 1981-1984 period.

Many kolkhozes, sovkhozes and rural regions ensure the fulfillment of their plans for selling grain to the state by raising their grain crop yields. During the 1981-1984 period, the farms in Yefremovskiy Rayon in Tula Oblast (acting chief rayon state procurement inspector V. Poluektov) sold 186,500 tons of grain to the state, having fulfilled their 4-year plan for grain procurements by 104 percent. During 4 years of the 11th Five-Year Plan, the plans for selling a complete assortment of grain to the state were fulfilled by the farms in Kamyshlovskiy Rayon of Sverdlovsk Oblast (chief rayon state procurement inspector Comrade Milyutin), in Polesskiy Rayon (chief rayon state procurement inspector Comrade Kulgeyko) in Kaliningrad Oblast and in Glazunovskiy Rayon (chief rayon state procurement inspector Comrade Lavrentyev) in Orel Oblast and many others.

Winter and spring wheat, the grain of which contains only small quantities of low quality gluten, occupy an important place in the structure of the area under crops in the non-chernozem zone. Each year, spring wheat is grown on more than 1.5 million hectares. In recent years, many farms have expanded noticeably their winter wheat growing areas, having reduced simultaneously their forage crop sowing areas. During the 10th Five-Year Plan alone, the average annual winter wheat areas in the zone were increased by 123,000 hectares compared to the 9th Five-Year Plan and during the 1982-1984 period -- by 145,000 hectares compared to the level for the 10th Five-Year Plan. All of this led to an increase in the production of grain for this crop and to an increase in its procurements for the state resources. In 1984 the plan for wheat procurements was fulfilled in the zone by 110 percent and this constituted a great achievement for the kolkhozes and sovkhozes in the non-chernozem zone.

During the 1981-1984 period, the plans for selling grain to the state were fulfilled by farms in Moscow Oblast by 108 percent, Kalinin Oblast -- 103,

Vologda Oblast -- 121, Leningrad Oblast -- 115, Novgorod Oblast -- 101, Pskov Oblast -- 105, Sverdlovsk Oblast 101 and Kaliningrad Oblast -- by 107 percent. This year the grain crop productivity and yields on farms in the mentioned oblasts and active participation in grain procurements are making it possible to draw the conclusion that these oblasts will fulfill their plans for selling grain to the state during this current five-year plan. This will constitute a considerable contribution towards grain procurements on the whole throughout the Russian Federation.

At the same time, by no means is full use being made of the rich potential opportunities which are available in the Russian non-chernozem zone for increasing the production and procurements of all types of agricultural products and especially grain. Some farms, rayons, autonomous republics and oblasts in this zone are not realizing the planned cropping power, nor are they obtaining the yields required for carrying out the procurement plans or for satisfying to a considerable degree the grain forage requirements of public livestock husbandry. Many leaders and specialists still believe that their task is to produce coarse and succulent feeds and livestock husbandry products, with grain forage being allocated by the state.

During the 1981-1984 period, grain production on the whole increased throughout the zone. However, in the process only Leningrad Oblast fulfilled its grain production plan. During these years, the grain procurement plan was underfulfilled by 18 percent. The greatest debtors continued to be the farms in Orel Oblast, where the 4-year plan was fulfilled by only 68 percent, Ryazan Oblast -- 73, the Mordovian ASSR -- 57 and the Chuvash ASSR -- 71 percent. The collectives of kolkhozes and sovkhoses in these oblasts and autonomous republics had forgotten the first commandment of a grain grower.

The principal food crop in the non-chernozem zone is rye, the planned procurement volumes for which amount to 37 percent of the overall republic volumes.

During the 11th Five-Year Plan and especially during the 1982-1984 period, as a result of the adoption of a number of organizational-agronomic measures and particularly an expansion in the sowing areas of almost 700,000 hectares, the introduction of high-yield varieties of rye and an increase in purchase prices, the production and procurements of grain for this crop increased. Moreover, the sowing areas were expanded and rye production increased in all oblasts of the zone and this had a positive effect on rye procurements. An average of 57 percent more rye was purchased during the 1981-1984 period than during the years of the 10th Five-Year Plan.

The experience of leading farms and rayons and many oblasts and autonomous republics reveals that the non-chernozem zone could become a zone for the stable production and deliveries into the state resources of rye -- the most important bread grain crop.

At the same time, the farms in a number of oblasts are not fulfilling their plans for selling rye to the state, mainly owing to violations of the agricultural technology and neglect in the area of seed production. For example, each year only 10-15 percent of all rye sowings in Kirov Oblast are carried out using 1st class or, at best, 2d class quality seed. Rye is being sown on many

thousands of hectares using freshly harvested seed which has still not undergone post-harvest ripening and which has a lowered germinative capacity. As a rule, the yields from such seed are low compared to that obtained from seed of a carry-over fund and if the sowing is 10-12 days late in being carried out, then the farms can expect to lose a good half of their crop. Convincing confirmation of this fact -- considerable under-fulfillment throughout the oblast of the plans for rye sales: during the 10th Five-Year Plan, they were fulfilled by 49 percent and during 4 years of the current five-year plan -- by 77 percent. The farms in this oblast must undertake a study of the leading experience of kolkhozes and sovkhozes and introduce it into operations.

Many farms in the non-chernozem zone have for all practical purposes discontinued in recent years their cultivation of the principal groat crop -- buckwheat. Moreover, in addition to a reduction in its sowing areas, the yields for this crop have declined on a majority of the farms. Some of them are not even harvesting seed. The prices for buckwheat have always been high and economically profitable. At the present time, the state is paying 400 rubles for each quintal of this crop and, in addition, it is stimulating the sales of mixed feed.

However, just as in the past, proper attention is not being given to buckwheat on many farms throughout the zone. And this is occurring owing to the fact that in a majority of oblasts and autonomous republics this crop is being employed on farms with no consideration being given to the soil and other conditions. Moreover, no control is being exercised over observance of the cultivation technology for this crop. All of these factors have produced a situation wherein buckwheat is considered to be an unproductive crop. The negligible volumes of buckwheat being sold have lowered the economic interest in production. The leaders of both the agricultural and procurement organs are guilty in this regard.

The Goszagotinspektsii [state procurement inspections] are not displaying high principles in evaluating the work of those farms which scorn the interests of the state and they are publicizing only weakly the economic indicators of leading kolkhozes and sovkhozes which are systematically fulfilling their plans for the production and sale of buckwheat. Such farms are to be found in Ryazan, Tula, Orel and other oblasts of the non-chernozem zone.

During the 10th Five-Year Plan, the procurement plan for buckwheat was fulfilled by only 9 percent, in 1981 by only 4 percent, in 1982 by 16 percent, in 1983 by 11 and in 1984 by 18 percent. In 1984, Bryansk Oblast sold only 100 tons of buckwheat to the state, Smolensk Oblast -- 30 tons, Kirov Oblast -- 300 tons, the Chuvash ASSR -- 200 tons and the Mari ASSR -- 400 tons.

The insufficient volumes of buckwheat grain procurements are also the result of restrictions on buckwheat procurements and the use of this valuable crop in considerable quantities for intra-farm purposes. Thus, in 1984, 29 percent of the yield in Orel Oblast was sold to the state, in Tula Oblast -- 32 percent of the amount harvested, in Ryazan Oblast the marketability of buckwheat amounted to 38 percent and in the autonomous republics of Volgo-Vyatskiy Rayon -- 12-20 percent.

The consumers are waiting for the leaders and specialists of farms and agricultural organs and also the procurement specialists to adopt and implement especially serious changes in organizing the production and procurements of buckwheat. The chief state inspectors for procurements of buckwheat in the Mari ASSR (V. Smirnov), the Chuvash ASSR (V. Grigoryev), the Udmurt ASSR (P. Kholmogorova), Gorkiy Oblast (L. Zubarev), Kirov Oblast (V. Petukhov), Kaluga Oblast (V. Kostyshev) and some other oblasts are obligated to examine very thoroughly the status of affairs in buckwheat production on each farm and in each rayon and to bring a halt to reductions in sowing areas and to the planting of buckwheat on poor lands. In addition, they must ensure that the mentioned autonomous republics and oblasts continue to carry out their plans for the production and procurements of this crop.

The non-chernozem zone is also a zone for the cultivation of brewing varieties of barley. And although the principal barley areas here are sown in brewing varieties, for a period of many years only Kaliningrad Oblast (chief state procurement inspector V. Kodolov) has been fulfilling its established plan for the sale of this valuable raw material for the brewing industry. And during the 11th Five-Year Plan, no notable changes took place: in 1981 the procurement plans were fulfilled by 16 percent, in 1982 -- by 24, in 1983 -- by 42 and in 1984 -- by 24 percent.

All of this testifies to the fact that farms which cultivate brewing barley in the non-chernozem zone are carrying out only weak work in connection with the breeding, processing and sale of barley of brewing condition to the state and quite often grain of brewing varieties of barley are supplied in fulfillment and over-fulfillment of the procurement plans for forage barley. As a result of insufficient attention being given to the production and sale of brewing condition barley to the state, the processing industry is supplied with reduced quantities of high quality raw material and the farms lose vast amounts of additional income and thus they are deprived of an opportunity to strengthen their economy and operate in a profitable manner.

During the 11th Five-Year Plan, with a considerable increase taking place in the procurement plans for grain forage crops, the sowing areas for barley decreased considerably and in 1984 amounted to 3,223,000 hectares, or 2,323,000 hectares less than the average for the years of the 10th Five-Year Plan. As a result, barley production decreased considerably. In 1984, it fell to the level of the 10th Five-Year Plan in Tula, Kaluga, Orel, Ryazan and many other oblasts.

The decline in barley production brought about a disruption in the plan for barley procurements. In 1984 the plan for barley procurements was not fulfilled on farms in Novgorod, Bryansk, Vladimir, Ivanovo, Kalinin and Kaluga oblasts and in a number of other oblasts.

Oat sowings within the zone exceed 3.5 million hectares and this is somewhat more than the average annual indicators for the 10th Five-Year Plan. On the whole, these areas ensure fulfillment of the plans for oats procurements. During the 1976-1980 period, the plan for oats procurements was fulfilled on the average by 142 percent and during the 1981-1984 period -- by 114 percent. At the same time, a reduction in the sowing areas for oats was tolerated during the



1981-1984 period in the Mordovian ASSR and in Kirov, Gorkiy, Bryansk and Ryazan oblasts. As a result, the plan for procurements here and especially in Kirov and Gorkiy oblasts is not being fulfilled from year to year.

The non-chernozem zone possesses the potential required and must become a zone for the stable production of grain and for ensuring that livestock husbandry is supplied not only with coarse and succulent feed but also with concentrated feed. The chief means for raising the gross grain yields is that of raising the cropping power. But one must not overlook the opportunities for expanding the sowing areas for grain crops in those regions where a great amount of land reclamation work is being carried out and where feed production must be shifted to natural lands. In order to achieve this goal, intensive technologies for the cultivation of grain crops must be introduced in a persistent manner, the strict observance of technological discipline must be ensured and the culture of farming raised.

The cultivation of grain crops using an intensive technology promotes the development of yields which are in keeping with the potential of the variety employed. The winter wheats Zarya, Mironovskaya-808, Akhtyrchanka and Polesskaya and the winter ryes Voskhod-1, Voskhod-2, Chulpan and Kharkovskaya-60, all regionalized in this zone, can ensure yields of 60-70 quintals of grain per hectare. Last year, a check was carried out on this technology on several farms in Moscow Oblast. Even with incomplete observance of the recommended complex at the Borets Kolkhoz, from an area of 100 hectares 48.6 quintals were obtained, at the Voskresenskiy Sovkhoz (260 hectares) -- 42.2, at the Zarya Kommunizma gosplemzavod /state breeding plant/ (200 hectares -- 50.6 and at the Runovskiy Sovkhoz (207 hectares) -- 50 quintals of winter wheat per hectare. On the remaining fields of these farms, the wheat yields were 8-16 quintals lower.

During this current year, winter crops in the non-chernozem zone of the RSFSR were sown on more than 5 million hectares. The intensive technology was used for cultivating them on a large area. In Moscow Oblast, the "intensive fields" occupy approximately 60,000 hectares or 25 percent of the winter crop sowings. On the overwhelming majority of farms in the non-chernozem zone, all measures are being undertaken to ensure that full use is made of the potential afforded by the new technology for obtaining high winter crop yields. This serves as a principal means for increasing the gross grain yields for the purpose of ensuring unconditional fulfillment of the plans for selling grain to the state and for satisfying the internal requirements of each kolkhoz and sovkhoz for grain by means of internal production.

In solving these tasks, a greater amount of responsibility will be borne by the republic (ASSR), oblast and rayon goszagotinspektsiyaa /state procurement inspections/. Many of them in the non-chernozem zone have accumulated experience and are genuine organizers of procurement operations. Thus, harmonious work is being achieved among all partners in the agroindustrial complex. In the future, a requirement will exist for improving procurement operations and for promoting the addition to state resources of grain in an assortment of crops that will serve as a worthy contribution towards accelerating the realization of the Food Program.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### BRIEFS

FOOD FOR FOREST ANIMALS--Bryansk (TASS)--Many nature lovers have entered the Bryansk forests for the purpose of furnishing assistance to the troubled inhabitants of the forest. They brought food for them. Following several thaw periods, strong frost was experienced causing the snow to turn hard. An icy crust formed in many areas. Conditions were difficult for the inhabitants of the forest. The provisions turned out to be very useful. Members of the Klintsy Society of Hunters, for example, had laid away for the winter approximately 200 quintals of fodder potatoes and beets and a large amount of hay and besom. In carrying out this work, the hunters and forestry workers are receiving assistance from members of school forestry societies and young naturalists. For example, they have established "eating areas" for birds in the green zones of cities and villages. /Text/ /Moscow SELSKAYA ZHIZN in Russian 9 Feb 86 p 4/ 7026

ORGANIC FERTILIZER, SEED --Bryansk--More than 9 million tons of organic fertilizer have been moved out onto the oblast's fields -- more than 2 million tons more than the figure for this same time last year. Almost all of the grain\_crop seed conforms to the 1st and 2d class of the\_sowing standard. /Text/ /Moscow SELSKAYA ZHIZN in Russian 20 Mar 86 p 1/ 7026

AGROCHEMICAL WORK COMPLETED--Orel--The winter agrochemical work has been completed on all of the fallow fields in Orel Oblast. These tracts will serve as the foundation for introduction of the intensive technology for the cultivation of grain and row crops. /Text/ /Moscow TRUD in Russian 9 Jan 86 p 1/ 7026

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LIVESTOCK FEED PROCUREMENT

UDC 633.2/4.00.3

USE OF FOOD PROCESSING BY-PRODUCTS FOR FEED ENRICHMENT

Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 2, Feb 86 pp 26-29

[Article by V. Goncharov, candidate of economic sciences, sector manager (All-Union Scientific Research Institute of Economics of Agriculture): "On Feed Production Reserves"]

[Text] To expand the use of by-products of the food and fishing industry, as well as food waste, for feed purposes.

From the draft of the Basic Directions in the Economic and Social Development of the USSR for 1986-1990 and for the Period Until the Year 2000.

At present the country's feed resources do not fully ensure the needs of animal husbandry, nor do they meet the requirements for the nutritive composition and, especially, the content of protein in them. An efficient use of by-products and waste of the food industry is one of the ways of improving feed production. In connection with this the draft of the Basic Directions in the Economic and Social Development of the USSR for 1986-1990 and for the Period Until the Year 2000 envisages "expanding the use of by-products of the food and fishing industry, as well as food waste, for feed purposes."

The value of such waste as cake and oil-seed meal is due to the high content of protein, presence of fat, and a sufficient amount of calcium. In the content of amino acids it occupies the second place after feed of animal origin. It is included in feed rations as a protein component.

Basically, the mixed feed industry receives oil-seed meal and cake. About 15 percent is sent to kolkhozes, sovkhoses, and interfarm enterprises, mainly in oblasts, where oil and fat enterprises are located.

The feed value of oil-seed meal depends on the observance of seed processing technology and storage and transportation conditions. At the same time, existing wholesale prices of oil-seed meal are not differentiated and do not stimulate processing enterprises to produce high-quality oil-seed meal. As a result, mixed feed industry plants often receive second-grade cotton oil-seed meal with a low feed value.

The wholesale price of oil-seed meal is one-fourth or one-fifth of the wholesale prices of basic fodder crops, such as barley, oats, and corn, despite the fact that in the content of digestible protein oil-seed meal exceeds them almost fourfold.

At oil and fat enterprises oil-seed meal is enriched with fat waste for an increase in its feed value. Oil-seed meal enriched with lipids contains 2.5 to 3 percent more oil than nonenriched oil-seed meal.

Soybean oil-seed meal is most valuable, because the composition of the protein contained in it approximates protein of animal origin.

When sunflower and cotton seeds are hulled, sunflower shells and cotton husks are obtained, their yield comprising approximately 14 and 28 percent of the bulk of processed seeds respectively. Kolkhozes and sovkhoses receive about 75 percent of the cotton husks as coarse feed for livestock. The other part is sent to hydrolysis plants for the production of feed yeast. Individual processing enterprises sell unprocessed sunflower shells at the price of 1 ruble per ton; pelleted shells, 5 rubles per ton and granulated shells, 16 rubles per ton.

Sunflower shells belong to the waste of the oil and fat industry that has not yet found an efficient application. Only some processing plants transfer shells to hydrolysis plants. Others burn them in boilers and sell them to neighboring enterprises as fuel. Taking the shortage of feed into account, it would be advisable to prohibit the use of shells as fuel and to use them in the production of feed yeast and as coarse feed.

Animal husbandry is short of protein, as well as of fat. The content of fat in shells of high-oil sunflower varieties reaches 5 percent. Therefore, their nutritive value is higher than that of straw. A technology of milling and granulating shells enriched with fat waste for cattle feeding has been developed in the last few years.

During sugar beet processing beet pulp is the main waste. It is widely used in industrial cattle fattening. This is connected with the fact that beet pulp is inexpensive feed and contributes to a rapid increase in the live weight of animals. The fattening of animals with beet pulp rations on farms begins from a preparatory period lasting up to 15 days, during which animals are trained to eat beet pulp. Then the feeding norm is increased gradually.

Many enterprises have a great deal of experience in the use of beet pulp and beet molasses in cattle fattening. In particular, about 12,000 head of young cattle are annually fattened at the Livenskoye Interfarm Enterprise in Orel Oblast. An analysis of the work of this enterprise shows that in the last few years the collective has attained high technical and economic indicators.

Only one-third of the beet pulp produced by sugar plants is used by farms in fresh form. State and interkolkhoz centers for cattle fattening located near sugar plants, as well as sugar beet supplying farms, are the main consumers of fresh beet pulp. The private sector receives a negligible amount of beet pulp. For example, in 1984 a total of 76.0 percent of the beet pulp was

delivered to kolkhozes and sovkhoses and 1.6 percent, to the population. It should be noted, however, that significant differences in the use of beet pulp are observed throughout the country's regions (see table).

Use of Beet Pulp in 1984, %

	Industrial Processing	Kolkhozes and Sovkhoses	Private Subsidiary Plots
USSR	13.5	76.0	1.6
RSFSR	16.3	74.0	1.2
Ukrainian SSR	12.2	76.7	1.8
Belorussian SSR	18.0	81.3	0.6
Kazakh SSR	-	88.7	1.4
Lithuanian SSR	7.4	90.6	1.2
Moldavian SSR	24.8	64.2	1.7
Latvian SSR	-	89.1	0.5
Kirghiz SSR	-	91.0	0.2
Armenian SSR	8.1	86.3	1.8

Sugar plants sell 50 kg of fresh beet pulp containing 6.5 percent of dry substances at the price of 80 kopecks per ton, or a corresponding amount of squeezed or acid beet pulp, to kolkhozes, sovkhoses, and other state agricultural enterprises per quintal of sugar beets delivered according to the plan. To increase the interest of sugar beet planting farms in raising the production and sale of sugar beets in excess of the plan, sugar beet industry enterprises sell 75 kg of beet pulp (in terms of raw beet pulp) per quintal of sugar beets sold to the state in excess of the plan at the price of 80 kopecks per ton.

The transportation of fresh sugar beet pulp is connected with difficulties and is not always efficient economically. For example, as a result of research, A. V. Golubev and I. V. Golubeva have established that during the delivery of fresh beet pulp from a sugar plant to a farm at a distance of 30 km its cost increases more than fivefold as compared with the release price. It should be noted that an increase in the price occurs not only owing to direct losses of weight (of the water flowing out on the road), but also as a result of deterioration in the nutritive properties of feed, because many important substances escape with water from beet pulp.

Fresh beet pulp contains approximately 93.5 percent of moisture. Therefore, its transportation is not efficient. In the future sugar plants should deliver all beet pulp to farms in pressed form.

In order to avoid big losses of nutrients during the storage of fresh and acid beet pulp and to increase its transportability, beet pulp is dried. One quintal of dried beet pulp contains 83 to 85 feed units and about 4 kg of digestible protein. Its nutritiousness is 9 to 11 times higher than that of fresh beet pulp. At the same time, its weight is reduced 12- to 13-fold. In the number of feed units dry beet pulp is almost equal to oats, comprising 8 to 10 percent in some mixed feed recipes.

To decrease heat consumption during drying, a substantial part of the water is removed from fresh beet pulp by means of beet pulp squeezing presses bringing the content of dry substances up to 16 or 18 percent and more. Most sugar plants are now equipped with PVZh-60 vertical beet pulp squeezing presses of a productivity of 1,000 tons of sugar beets in 24 hours.

A-4-PVZh-B vertical deep beet pulp squeezing presses of a productivity of up to 4,000 tons of sugar beets in 24 hours, which bring the content of dry substances in pressed beet pulp up to 20 or 25 percent, have been developed and introduced in the last few years.

The production of dry beet pulp in the form of pellets and granules enriched with molasses, carbamide or ammonia acquires special importance in connection with the growth of the number of interfarm mixed feed plants using dry beet pulp as one of the basic mixed feed components. For example, in the Ukrainian SSR alone the number of interfarm mixed feed plants increased from 318 in 1975 to 372 in 1984 and in the RSFSR, from 90 to 209.

Sugar plants produce dry beet pulp in a small quantity. This is due to the fact that sugar plants and agricultural enterprises are not interested in increasing the output of dry beet pulp, because in fresh and acid form it remains at their disposal, while dry beet pulp can be shipped outside an oblast or a kray.

To improve the use of sugar industry waste, in the future it is advisable to reexamine the organization of beet pulp distribution. For a better preservation of nutrients the production of dried beet pulp should be increased. It is also necessary to change the procedure of allocation of mixed feed to kolkhozes and sovkhozes. It is advisable to use one part of dried beet pulp for the production of mixed feed at interfarm mixed feed enterprises within one's own administrative regions and for the other part of beet pulp to obtain ready mixed feed.

During potato processing at food industry enterprises a large amount of waste--potato pulp and cell sap--is formed. The nutritive value of fresh potato pulp is not high, the dry substance consisting mainly of nitrogen-free extractive substances. Basically, it is used for livestock feed on kolkhozes in Lithuania and the Ukraine. About 12 percent is sold to the population.

Potato pulp is not easily transportable owing to the high content of moisture in it (up to 90.5 percent). Therefore, for the convenience of transportation it is pressed and dried. After pressing its volume is reduced and the load on transport is decreased to one-fourth. In its feed value potato pulp approximates grated potatoes, the content of dry substances reaching up to 27 percent.

The low prices of potato pulp lead to its inefficient use. For example, the wholesale price per ton of raw potato pulp is 0.5 rubles for RSFSR enterprises and 1 ruble for plants in other republics. Pressed potato pulp is released at the price of 2 rubles 50 kopecks per ton. On farms located not far from starch hydrolysis enterprises fresh and pressed potato pulp is fed to cattle, hogs, and poultry.

Cell sap obtained during potato processing is hardly used, although it comprises about 50 percent of the mass of processed potatoes. Practice shows that it is more advisable to use raw potato feed, which represent a mixture of potato pulp and cell sap, for animal fattening. The wholesale price of raw mixed feed is 4 rubles per ton. According to the data of the All-Union Scientific Research Institute of the Starch Hydrolysis Industry, capital investments for the production of raw feed from pressed potato pulp and cell sap at enterprises of a capacity of 100 tons in 24 hours total 37,000 rubles.

A technology of fermentative hydrolysis of potato pulp and cell sap has been developed at the Scientific Production Association for Starch Products. Its wide introduction in the sector will make it possible to utilize potato pulp and cell sap and to obtain carbohydrate-protein hydrolyzate and protein feed. Protein feed (coagulated protein of cell sap) is assimilated 80 percent by animals.

When potatoes are processed in the alcohol industry, a mash is obtained. A potato mash contains 3.2 to 4.1 percent of dry substances. It should be noted that dry substances of a potato mash contain less protein than a grain mash. However, it is richer in carbohydrates and mineral substances.

Farms receive the bulk of the grain-potato mash in natural form. The period of fattening of adult livestock with a mash is 60 to 80 days and of young stock 1.5 to 2 years old, 70 to 90 days. The low release price, which does not correspond to the good feed qualities of a mash, is the basic reason for its inefficient use.

The processing of a potato mash into feed yeast and its use in the composition of mixed feed and in the form of a liquid feed product is the most efficient way of utilizing a potato mash, because the degree of digestibility of potato mash protein comprises 52 percent, whereas of feed yeast protein, up to 90 percent.

For the purpose of increasing the resources of protein feed for animal husbandry, the All-Union Scientific Research Institute of Fermentation Products developed a flow diagram for the production of dry feed yeast from a natural potato mash. The output of feed yeast totaled 5.5 to 6 tons per 1,000 decaliters of alcohol. Furthermore, the formation of liquid waste--a secondary mash--has been eliminated, which makes it possible to create waste-free production.

In the last few years much attention has been given to the production of liquid feed yeast. Its use at animal husbandry complexes is economically profitable in cases when alcohol enterprises are near the consumer. The use of liquid feed yeast makes it possible to enrich rations with highly digestible protein and increases the weight gain in livestock.

During the slaughtering of livestock and the production of finished products the meat industry receives waste containing high-grade protein. In 1984, as compared with 1970, the output of dry animal feed at meat and dairy industry enterprises doubled. The output of dry feed per ton of produced meat also

increased. However, its production at meat industry enterprises is not organized uniformly. For example, in the Estonian SSR and the Turkmen SSR the output of dry animal feed per ton of meat is much lower than the average output in the country.

Presently used technology and technical facilities do not meet modern requirements. At many enterprises dry animal feed is produced in periodic-action horizontal-vacuum boilers, which is connected with big power expenditures.

There are considerable potentials for the output of dry animal feed. Some meat industry enterprises do not have shops for the output of dry animal feed and transfer waste to neighboring processing enterprises. However, this is not always done.

Bones, basically received for the output of glue and fertilizers, are used in an especially inefficient manner. It is more advisable to increase the production of glue from chemical agents and to use bones for the production of dry animal feed. The production of dry animal feed will increase when the collection of bones by public dining enterprises and from the population is organized. Thus, according to G. Kurkin's evaluation, public dining enterprises can annually collect about 300,000 tons of bones. The population, together with meat, purchases 600,000 to 650,000 tons of bones. Their collection should be entrusted to the Main Administration for the Procurement, Delivery, and Utilization of Secondary Raw Materials under the USSR State Committee for Material and Technical Supply. However, the actual collection comprises no more than 15 percent of the resources available in the country.

Significant measures to increase the production of dry animal feed have been taken in the last few years. In 1984 a total of 3,486 tons of meat-bone meal were produced in Tula Oblast, 1,531 tons, in the Chuvash ASSR, 3,553 tons, in Rostov Oblast, 2,245 tons, in Saratov Oblast, 4,268 tons, in Chelyabinsk Oblast, 1,532 tons, in Novosibirsk Oblast and 2,931 tons, in Maritime Kray. However, owing to the shortage or lack of waste installations and other necessary equipment, plants, and shops, the production of dry animal feed is growing in an extremely slow manner.

The elimination of shortcomings in the price formation and incentive system is of great importance for an increase in the output of dry animal feed. For example, fish meal is three to four times more expensive than meat-bone meal, although the content of protein in fish meal is only 1.5 times higher. For the purpose of increasing the output of dry animal feed, it is necessary to envisage an improvement in the system of bonuses for meat industry workers.

It is advisable to subsequently discontinue the output of cooked feed through an improvement in the organization of the collection and use of waste at small meat combines, as well as the establishment of shops for the production of dry animal feed at some of them.

For the purpose of regulating prices of by-products and waste of the food industry and stimulating their production and preservation, it is advisable to set wholesale prices not only on the basis of the feed value, but also with

due regard for the content of digestible protein. For example, during the calculation of prices associates at the Central Scientific Research Institute of Information and Technical and Economic Research of the Food Industry propose the use of correlation and regression analysis.

Improvement in the formation of prices of by-products and waste of the food industry will involve an increase in the production cost of livestock products. In connection with this it is advisable to withdraw the profit obtained as a result of a rise in wholesale prices and to assign it for subsidizing the production of livestock products. This must be done in two directions, that is, to transfer one part of the profit to mixed feed enterprises and the other, to kolkhozes, sovkhoses, and interfarm organizations. This is justified by the fact that, as noted above, part of the waste of the food industry is used directly on farms.

It is also necessary to improve statistical reporting, because it is not always possible to give an objective evaluation of the production and use of by-products and waste of the food industry.

Thus, an efficient use of by-products and waste of the food industry in animal husbandry will make it possible to increase the efficiency of functioning of the country's food complex during the 12th Five-Year Plan.

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## LIVESTOCK FEED PROCUREMENT

### TURKMEN PARTY ORDERS MAJOR IMPROVEMENT IN FEED SUPPLY SECTOR

[Editorial Report] Ashkhabad's TURKMENSKAYA ISKRA in Russian on 23 March 1986 page 1 reports that the Turkmen Communist Party Central Committee has examined the results of an investigation of the feed procurement work of republic, Party, soviet and economic organs. The investigation was conducted by a CPSU Central Committee team and revealed serious deficiencies.

Many republic kolkhozes and sovkhoses are not meeting requirements for livestock sector feed support. The harvest of feed crops remains low. In the 11th FYP the feed crop acreage increased 25 percent, but feed production increased only 11 percent. Ineffective utilization of feed lands is the chief reason for low cattle feed supply. An average of 28.5 quintals of feed units were harvested per hectare of irrigated land-- one-third that of leading farms.

The CPSU team found that Turkmen zonal farming has not been implemented scientifically, cotton and alfalfa crops have not been properly rotated, retarding the production increase of both these crops, feed crops have been planted in poor land, and that pasturage lands have been utilized haphazardly, lowering their productivity.

It was noted also that a considerable quantity of feed does not meet quality standards, the poor quality of coarse and succulent feed in many farms has resulted in overconsumption of feed concentrates, and that specialists have not dealt with the feed protein problem.

In addition, serious shortcomings exist in equipment utilization. Machinery repair quality is low, and commissions set up for inspecting equipment readiness are functioning poorly.

Further, it was indicated that only 61 percent of the hay was baled in 1985, mixed silage for hogs was not laid in, and chemical preservatives were not applied in feed preparation. The five-year plan for silage and haylage construction was fulfilled by 60 percent, and the hay storage plan was only 33 percent fulfilled.



Other deficiencies specified were the low implementation of cost accounting, and the failure to utilize the resources of scientific-research institutes. Recommendations of research scientists are not widely applied in republic farms.

These shortcomings are largely related to the fact that organizational and political activities of obkoms, raykoms and party organizations of kolkhozes and sovkhozes do not fully meet requirements of the 27th CPSU Congress with respect to livestock feed procurement.

The Turkmen Party Central Committee has called on the republic Gosagroprom, Gosplan and party organizations as well as kolkhoz and sovkhoz managers to take immediate measures to improve feed production development.

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## REGIONAL DEVELOPMENT

### GEORGIAN AGROPROM CHAIRMAN DISCUSSES PROSPECTS, PROBLEMS

[Editorial Report] Tbilisi KOMUNISTI in Georgian on 15 February 1986 carries on pages 1-2 KOMUNISTI correspondent V. Gozalishvili's 3,000-word interview with State Agroindustrial Committee Chairman Omar Vardzelashvili concerning the purposes, prospects and problems of the vast and vital new organization he heads since it was formed by restructuring and broadening its predecessor, the State Agricultural Production Committee. The overall purpose is best summed up in the statements "Now all relevant production, processing, and marketing concerns are under a single authority [v odnikh rukakh]" and "the land has one master." Furthermore, "departmental barriers" are abolished in all the relevant sectors.

One of the important thrusts of the reorganization is to reduce "apparatus" personnel--by 35 percent in the central apparatus--and apply the savings thus achieved to raising salaries by 35 percent (45 percent at the RAPO level). In addition, local authorities have the right to raise highly-skilled personnel's remuneration by 50 percent. These measures are aimed at improving state, labor, and production discipline.

Chairman Vardzelashvili dwells on a number of problems that need to be dealt with in the coming years. Productivity in Georgian agriculture still lags behind all-union levels, while the prime cost of production is higher. The republic's grape and wine industry has been hit hard by the anti-alcoholism program and must undergo intensive restructuring. Canned goods and produce, their quality and assortment, leave much to be desired, and do not find much favor with consumers. Losses during harvesting, transporting, processing, and marketing remain high.

Cadres constitute a key factor. For one thing, there is the matter of finding work for all the personnel who have been released through streamlining measures. On a higher and more general plane, Georgian agriculture still suffers from a shortage of workers who "think in the new way," who can break out of "stereotypical" habits of management.

The concluding paragraphs of the interview go into some detail about the role of each level from the top down to the RAPOs, how plans are formulated up and down the line, and so on.

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AGRO-ECONOMICS AND ORGANIZATION

CALCULATING GROSS AGRICULTURAL OUTPUT IN NEW COMPARABLE PRICES

Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 2, Feb 86 p 65

[Article by M. Krapivina, chief economist of the Administration of Statistics of the Agroindustrial Complex of the USSR Central Statistical Administration: "On New Comparable Prices in Calculations of Gross Agricultural Output"]

[Text] As of 1976 the prices of 1973 were used as comparable prices for an evaluation of agricultural output. The proposal on a changeover, beginning in 1986, in the planning and accounting of gross agricultural output to new comparable prices--average prices of agricultural products in 1983--was adopted in February 1984.

The need to change over to new comparable prices is due to the fact that prices of sale of agricultural products, in particular purchase prices, as well as their production cost, change significantly during different periods in connection with the change in prices of industrial products used in agricultural production (agricultural machines, implements, petroleum products, mineral fertilizers, feed of industrial production and so forth). This leads to the fact that after a certain period existing comparable prices cease to reflect the real conditions of production of agricultural products, value proportions in the structure of gross output are distorted and difficulties in ensuring the comparability of indicators of gross output in dynamics can arise.

Furthermore, the need to determine volumes of production of all sectors forming part of the APK and to establish their place and importance respectively also arises under the conditions of development of the agroindustrial complex. As is well known, new wholesale prices were put into effect in industry on 1 January 1982 and in capital construction, on 1 January 1984.

Comparable prices of individual agricultural products are determined as weighted average prices of the commodity and noncommodity part of gross agricultural output in the actual prices of the base year. Weighted average comparable prices adopted as base prices are uniform for the entire country and the same for all farm categories. When agricultural output is calculated in comparable prices, an unconditional fulfillment of the following basic provisions is assumed.

Comparable prices are determined with due regard for the type and quality of output and, at the same time, price increases, including increases for above-plan sale of output, are taken into account.

The need to take into account all the enumerated prerequisites stems from the following. In cases when the share of more valuable products (wheat) changes in the total mass of a given product homogeneous in its purpose (for example, grain), ignoring the composition of output in terms of type and quality leads to a distortion of the actual dynamics of the production of this product. A deviation from the principle of a uniform all-Union price inevitably will lead to an incorrect reflection of the dynamics of the volume of output throughout the country.

The new comparable prices of 1983 were reported to all ministries, departments, and councils of ministers of the Union republics. Statistical bodies of oblasts, krais, and autonomous and Union republics have these prices at their disposal.

Recalculations of gross output can be organized in the following manner: For 1983 gross output is determined in the new prices of 1983 in accordance with the established procedure, that is, on the basis of the volume of production of individual types of products in physical terms during this year and in new comparable prices per unit of output. It is advisable to take the data on the volume of production, as well as all the additional indicators in kind, from the previously performed calculation for 1983 in the prices of 1973.

The calculation is made for plant and livestock output. The total volume of gross agricultural output in new comparable prices is calculated as the sum of the results obtained in sectors.

The method of chain indices is used for recalculations of gross output during the remaining years preceding 1983 and following it (through 1985 inclusive).

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AGRO-ECONOMICS AND ORGANIZATION

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PRODUCTION COST REDUCTION, PRICING STABILIZATION SOUGHT

Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 3, Mar 86 pp 59-64

[Article by V. Kufakov, candidate of economic sciences and chief of the USSR Goskomtsen's Agricultural Department: "Production Cost of Agricultural Output and Pricing"]

[Text] The CPSU program points out: "Pricing should be improved so that prices would reflect more accurately the level of socially necessary expenditures, as well as the quality of production and services, more actively stimulate scientific and technical progress, economizing of resources, improvement of technical and economic and consumer properties of goods, and introduction of everything new and advanced and would promote strengthening of the policy of thrift."

Price is one of the main elements of economic mechanism. The equivalence of exchange of commodities and services between various sectors of the national economy depends on the level and improvement of prices, and consequently also the strengthening of the union of the working class, kolkhoz peasantry and intelligentsia, correct combination of interests in the development of industry and agriculture, balance in the development of all APK sectors, strengthening the interest of people in the development of social production, and raising the material welfare of the Soviet people.

With the aid of improvement of the system of prices the state exerts influence on strengthening cost accounting, stimulates economical expenditure of funds, regulates distribution of national income, and ensures strengthening of the ruble and raising the purchasing power of the population. Calculations testify that the purchasing prices currently in force for agricultural products (with the surcharges set for them) under the established production cost make it possible to obtain cost accounting profitability at the level of 22-24 percent. It should be noted that attention to production cost was relaxed when economic categories such as gross income, profit, level of profitability, and so forth began to be widely used in determining the activity of enterprises.

Production cost is the basis of price. During the past 20 years, the adjusting of prices and bringing their level nearer to the socially necessary expenditures of labor has been done on its basis. For this purpose the state has lately additionally directed approximately R32-33 billion calculated per year for raising purchasing prices. Studies have shown that in the country as a whole the production cost of agricultural output has been growing. Thus, expenditures

for production in kolkhozes and sovkhozes calculated per R100 of gross agricultural output (in comparable 1973 prices) amounted to R70 during the 8th 5-Year Plan, R89 during the 9th 5-Year Plan, R111 during the 10th 5-Year Plan, and exceeded R130 during the 1981-83 period.

During the past 20 years, the production cost of most kinds of agricultural output has increased in kolkhozes and sovkhozes. An analysis of the structure of production cost of output makes it possible to see that in 1966-83 there was an increase in expenditures for the production of all agricultural products. Purchasing prices also increased. For example, in 1983, compared with 1966, the production cost of animal husbandry output in kolkhozes increased 3.1-fold and prices were raised 3.3-fold. Expenditures for the production of plant growing output during these years increased twofold and prices 1.7-fold. In the country's kolkhozes as a whole the growth of production cost of output amounted to 2.8-fold with a 2.5-fold rise in prices. The production cost of output and purchasing prices also increased in sovkhozes.

The rise in purchasing prices as of 1 January 1983 was most significant. The state has allocated R16 billion for raising prices and surcharges or roughly as much as during the preceding 17 years. This important economic and political measure has made it possible to create conditions for introduction of cost accounting in all links of agricultural production. During 1983-84, compared with the first 2 years of the past 5-year plan, the country's output of gross agricultural production calculated per year increased by R11 billion. State purchases of milk during this period increased by 14 percent, of livestock and poultry by 11 percent, and of eggs by 7 percent.

The overall amount of profits from all economic activity of kolkhozes and sovkhozes amounted to R23.7 billion in 1983 and to R20 billion in 1984 against R1.3 billion in 1982. In 1984, compared with the average annual level in the 10th 5-Year Plan, kolkhozes and sovkhozes additionally received R6.3 billion only through an increase in the procurement of agricultural production.

New purchasing prices and surcharges to them make it possible to profitably conduct production of all kinds of products in all republics and natural and economic zones of the country. The level of profitability of production in sovkhozes increased from 1.6 percent in 1982 to 20.1 percent in 1983 and 12.8 percent in 1984 and in kolkhozes correspondingly from 2.3 percent to 25.3 and 21.7 percent. The number of profitable farms has increased by 70 percent and the number of unprofitable ones had decreased to two-eighths.

However, quite a few unprofitable farms still remain even after an unprecedented increase of purchasing prices with regard to scale. Thus far potatoes are produced at a loss by 54 percent of farms, cattle by 40 percent of farms, and pork, mutton, wool, and eggs by 60-64 percent of farms. Analysis testifies that, as a rule, the level of production concentration is low and relative expenditures are high in kolkhozes and sovkhozes which sell one or another production at a loss. Sovkhozes, which sustain a loss from production of potatoes, sell 3.5-fold less of them on an average per farm than those which produce them at a profit, those which produce pork at a loss sell 5.2-fold less of it, and those which produce poultry and eggs at a loss sell nearly 60-fold less of them.

So far animal husbandry production is unprofitable in the Uzbek SSR and in the majority of farms of the Georgian SSR, the Tajik SSR, the Turkmen SSR, and the Moldavian SSR. At the same time, the profitability level in the production of cotton, tea leaves, grapes, and other products is high in these republics. The share of receipts from the sale of animal husbandry products is small in these regions. Livestock productivity is very low and expenditure of labor and fodder (calculated per unit of production) is high here. Forty-five to fifty percent of cows in the Georgian SSR and the Turkmen SSR do not have offspring annually. The upkeep of dry cows leads to increased milk production costs.

Purchasing prices have a direct connection with the entire system of prices--retail, wholesale, market, and commission prices. The value of agricultural production, expressed in purchasing prices, is the basis of wholesale prices for commodities which are manufactured from agricultural raw materials, and, consequently, the basis of retail prices for foodstuffs. Their change has a direct influence on the level of market and commission prices.

In the USSR a course is being consistently pursued toward ensuring the stability of state retail prices for basic foodstuffs and nonfood consumer items. For example, the prices for bread, potatoes, meat, milk, and other food products of all sections of the population have not changed for many years and even decades. Consequently, the state guarantees a real increase of workers' income under conditions of growth of their wages and payments from public consumption funds to them. But purchasing prices were increased. As a result, state expenditures were increased for compensation of the difference between purchasing and retail prices for plant growing and animal husbandry production, which is purchased from kolkhozes, sovkhoses, and private plots of kolkhoz members and workers. According to the data of the USSR Ministry of Finance these subsidies amounted to (billions of rubles) (Footnote) (See journal "FINANSY SSSR", No 4, 1985, p 5):

	1965 r.	1982 r.	1983 r.	1984 r.
(1) Мясо	2,8	15,3	21,4	21,0
(2) Молоко	—	9,0	13,8	14,1
(3) Зерно и маслосемена	0,3	2,0	3,7	3,6
(4) Картофель и овощи	—	1,7	2,2	2,4
(5) Прочая продукция	0,4	1,9	4,2	3,8
(6) Надбавки к закупочным ценам для низкорентабельных хозяйств	—	—	9,3	9,8
(7) Итого	3,5	29,9	54,6	54,7

Key:

- |                                |   |
|--------------------------------|---|
| 1. Meat                        | 5. Other production                                     |
| 2. Milk                        | 6. Surcharges to purchasing prices for low profit farms |
| 3. Grain and oil-bearing seeds | 7. Total  |
| 4. Potatoes and vegetables     |   |

As we can see, in 1984, compared with 1965, subsidies from the budget increased almost 16-fold. The basic part of expenditures has to do with compensation of the difference in prices during purchases of meat and milk. In 1984, expenditures for compensation of the difference in prices reached 14 percent of state budget expenditures. In connection with the increase of purchasing prices in 1983 the subsidy per 1 kg of animal husbandry production, which is purchased by the state from kolkhozes and sovkhoses and in subsidiary farms of kolkhoz members and workers, was increased, which is obvious from the following data (ruble per 1 kg):

	(1) Говя- дина	(2) Сви- нина	(3) Мо- локо	(4) Масло слив- очное
(5) Средние розничные цены	1,77	1,84	0,24	3,38
(6) Затраты государства на производство и реализацию продуктов	4,75	3,25	0,42	8,18
(7) Превышение затрат над розничными ценами	2,98	1,41	0,18	4,80
(8) Выплаты из бюджета — компенсация	3,68	1,97	0,29	6,28

Key:

- |                          |  |
|--------------------------|--|
| 1. Beef                  | 6. State expenditures for production and realization of products |
| 2. Pork                  | 7. Excess of expenditures over retail prices                     |
| 3. Milk                  | 8. Payments from budget--compensation                            |
| 4. Butter                |  |
| 5. Average retail prices |  |

At the present stage of the country's development subsidies for foodstuffs as a means for improving the life of workers are a necessity. However, in proportion to the strengthening of the role of other levers of regulation of workers' real income, and particularly the growth of wages, the necessity in subsidizing foodstuffs by the state can and must be reduced. This will happen in the main as a result of reduction of output production costs, its storage, and realization.

The real conditions which have developed make it necessary that the growth of income of kolkhozes and sovkhoses is achieved not by means of raising prices, but by reducing production costs, eliminating poor management, and economizing in everything and everywhere. One cannot agree with the opinion of those who do not always link the raising of production intensiveness and development of new equipment and technology with economizing resources calculated on the output of unit of production and with raising labor productivity and yield on capital. "Thrift," the CPSU program points out, "skillful expenditure of public funds, rational use of every ruble, liquidation of poor management, and elimination of various unproductive expenditures and losses is a party-wide cause, a cause of all people, of every labor collective, of every worker."



Let us note that up to 1983 the level of profitability declined and the number of unprofitable farms increased. In 1983, compared with 1965, all expenditures for production of agricultural output in kolkhozes and sovkhoses increased 3.3-fold, whereas the value of gross production increased only 1.5-fold. The share of unprofitable farms was increasing from 5-year plan to 5-year plan. These enterprises did not have their own means for expanding production and raising its profitability and existed on credit. This gave rise to parasitic attitude on the part of farm supervisors and specialists and labor collectives, did not interest them in a more efficient use of land, fixed and working capital, and manpower resources and in improving the end results of agricultural production. The price, profit, and credit lost the role of economic levers.

The raising of purchasing prices, which was conducted as of 1 January 1983 in accordance with the measures adopted by the May (1982) plenum of the CPSU Central Committee, was an effective means for increasing efficiency in the use of physical resources being directed into agriculture. Own means of kolkhozes and sovkhoses for expanding production now represent a greater part compared with budget allocations and bank credits. This contributes to development of efficient independence of collectives and expands their possibilities of solving many economic and organizational and technological questions promptly and in a complex.

As a result, production costs were reduced for some agricultural products in the country's kolkhozes and sovkhoses in 1983. In 1984, the production cost of sunflowers, vegetables, sugar beets, grapes, and poultry meat in sovkhoses and of sugar beets, poultry meat, vegetables, potatoes, grapes, and milk in kolkhozes was somewhat reduced or remained at the 1983 level.

An analysis of farm activity results in the past few years confirms the necessity of further strengthening the cost accounting principles of management as the most important direction in stabilizing and reducing production costs. "Conveying the principles of cost accounting to all primary labor cells, to every work place is of great significance," the April (1985) plenum of the CPSU Central Committee pointed out. "This will make it possible to combine measures for improving the management system from above with development of collective forms of labor organization and stimulation from below and to raise workers' activity."

As a rule, economic indicators grow in a stable manner and production costs of output are reduced in kolkhozes and sovkhoses which use intraorganizational accounting. Let us take the Progress kolkhoz in Petropavlovskiy Rayon of Altay Kray as an example. A check accounting system between farm subdivisions has been used here over the past 10 years. The economic expediency of this system consists not only in the fact that annual limits with a monthly breakdown of funds for the payment for labor, fertilizer, repair of equipment, and other expenditures are set for every kolkhoz subdivision, but constant effective control over the expenditure of these funds is also provided. Supervisors of brigades and other subdivisions of the kolkhoz have the possibility of comparing the volume of production and expenditures for it with the limits and of correcting shortcomings on time and strictly appraising the quality of work. All of this makes it possible to substantially raise the efficiency of production.

In establishing a level of purchasing prices for agricultural production, a sectorial norm of combined profitability is also provided. According to calculations, for accomplishing the rates of production growth in kolkhozes and sovkhoses as outlined in draft plans for the 12th 5-Year Plan, the level of production profitability by taking budget allocations and bank credits into account should amount to 35-37 percent and the cost accounting level to 22-24 percent.

The level of payments for agricultural production, which was formed under the contemporary correlation of price, budget, and credit sources of financing the development of production, ensures the accounting norm of combined and cost accounting profitability. Under these conditions, we believe, the existing prices and surcharges to them (50 percent for exceeding the achieved level of purchases as well as to low profit and unprofitable farms) should be retained in the main without serious changes for the 12th 5-Year Plan. At the same time, prices for individual products will be improved. Thus, the purchase price for durum wheat grain has now been raised to R150 per ton. Surcharges will also be paid to the established purchase price: 100 percent for first grade grain, 70 percent for second grade, and 20 percent for third grade. The 50-percent surcharge to the purchasing price for the sale to the state of durum wheat grain above the average level achieved in the preceding 5-year plan is established regardless of exceeding this level for grain as a whole.

Measures have been adopted for raising the interest of kolkhozes and sovkhoses in producing wheat grain of most valuable and strong grades. The prices for raw cotton should be improved by raising the interest of farms in more fuller use of machines in harvesting it. It is necessary to stimulate output of production on newly developed land. By means of prices it is expedient to stimulate fish production in local reservoirs as well as to bring into conformity the prices for meat horses, which are exported, with purchasing prices for horses that are bought by the state for meat. It is necessary to broaden the rights of local organs in improving the setting of prices and conditions for purchasing substandard and standard production which is sold by kolkhozes and sovkhoses above the quantities agreed by contracts.

The most important direction in reducing the production cost of output is switching all sectors of agriculture to a primarily intensive way of development. It requires an increasingly greater use of industrial means of production. Their share in the production cost of agricultural output is increasing year after year and at the present time reaches 43 percent in overall expenditures, 33 percent represent wages, and 24 percent account for fodder, seeds, and other elements of production. The rates of growth of scientific and technical progress in agriculture are now determined for the most part by the msss and quality of machines, mechanisms, equipment, mineral fertilizers, means to protect plants, and the level of personnel training. Under these conditions the APK enterprises of the first sphere must operate in such a manner so that prices for means of production for agriculture would grow slower than their net effect.

Following the May (1982) plenum of the CPSU Central Committee a barrier was raised against unjustified rise in prices of industrial means of production

being directed to agriculture. Based on specially developed methods, the USSR TsSU and the USSR State Committee on Prices have been calculating since 1983 the indexes of change in purchasing and wholesale prices for industrial production sold to agriculture as well as the prices and rates for services rendered to agricultural enterprises and organizations.

Consolidated index of purchasing prices (payments) with consideration of their increase and surcharges to them, the increase in the amount of payments of 50-percent surcharges for exceeding the level of sales to the state in the 10th 5-Year Plan, and the improvement of production quality in 1983 with respect to 1982 has reached 125 percent or their growth amounted to R21.9 billion. Moreover, by virtue of increasing the volumes of state purchases of agricultural production the payments increased by R5.5 billion. But the consolidated index of wholesale prices for industrial production and of rates for services, according to which they were sold to agriculture, was equal to 107 percent. The overall amount of relative appreciation of means of production for agriculture with consideration of the depreciation of mixed feed and new equipment calculated per unit of net effect has reached R2.8 billion. The appreciation, for which agriculture was compensated by taking into account the increasing volume of deliveries of industrial production to agriculture, amounted to R5 billion.

In 1984, the consolidated index of purchasing prices for agricultural production compared with 1983 amounted to 102 percent. This was an increase of R2.3 billion. But the consolidated index of wholesale prices for industrial production and rates and services (taking quality into account) received by agriculture amounted to 104 percent. In this case the overall amount of relative appreciation of means of production, including equipment and rates for services for agriculture calculated per unit of net effect amounted to R1.2 billion.

But in the press the problem of appreciation is often raised without taking in consideration the last increase of purchasing prices and surcharges and the resolution of the CPSU Central Committee and the USSR Council of Ministers on improving economic interrelations in APK. This is radically incorrect. For example, a 75-horsepower crawler tractor cost R2,819 in 1975 but R3,505 in 1983 or 24.3 percent more. But at the same time, purchasing prices for grain increased by 28.8 percent, for potatoes by 69.4 percent, and for milk by 72.8 percent. In 1975, to purchase such a tractor kolkhozes and sovkhozes had to sell 25.4 tons of grain, or 31 tons of potatoes, or 11.7 tons of milk, but in 1983 they had to sell 23.4 tons, 18.9 tons, and 8.4 tons respectively. In order to purchase a ZIL-MMZ-555K dump truck in 1975 the farms had to sell 27 tons of grain, or 35.3 tons of potatoes, or 14.1 tons of milk, but in 1983 they had to sell 21.4 tons, 21.3 tons, and 8.32 tons respectively. The situation with regard to correlation of wholesale and purchasing prices for other basic means of production is similar.

The experience of poultry breeding and fattening of hogs and cattle on an industrial basis and of vegetable growing under greenhouse conditions confirms that the high level of mechanization and automation of production and its efficient organization are the basis for reducing the production cost of output

and raising its efficiency. Utilization of leading methods in organization of agricultural production and introduction of intensive production processes are of important significance for raising labor productivity and reducing the production cost of output.

In 1985, grain crops were cultivated according to intensive production processes on 16 million hectares, in the long term the area under such crops will increase to 60 million hectares. As a result of utilization of this method, the country will receive much additional high quality grain.

Kolkhozes and sovkhoses have great reserves at their disposal for reducing the production cost of output by efficient utilization of physical resources. Let us take the expenditure of grain fodder as an example. A great quantity of grain is used in mixed feed. However, in 1983 the country's kolkhozes and sovkhoses fed livestock 10 million tons of grain in unprocessed form. As a result, the farms lost about 3 million tons of grain or R2.7 billion worth according to its production cost.

The grain production structure needs improvement. Thus, in 1981-83 the share of bread grain amounted to 56.2 percent and of fodder grain to 43.8 percent at a time when there is a fodder protein shortage, which is partially covered by the use of concentrated fodder that is produced from wheat. But a lack of balance in the expenditure of fodder with respect to protein and lysine leads to overexpenditure of fodder. By improving the structure of sowing areas and expanding the sowing of sunflowers, soybeans, and rape it is possible in the long term to reduce the overexpenditure not only of fodder grain but of all fodder. Livestock feeding rations also require improvement, and the share of grain in concentrated fodder should be reduced.

Kolkhozes and sovkhoses still permit large losses of agricultural production. Everything is now being actively put in order in the country, therefore V. I. Lenin's words are particularly relevant: "Keep count of money accurately and conscientiously, run things in a thrifty manner, do not loaf, do not steal, adhere to strictest discipline in labor..." (V. I. Lenin, Complete Works, Vol 36, p 174).

The strengthening of the role of economic and material incentives of kolkhoz and sovkhos supervisors, specialists, and workers must become an important direction in strengthening the struggle for reducing production expenditures calculated per unit of output in kolkhozes and sovkhoses. The economic incentive system of workers of these categories now in force in the majority of farms is poorly linked with reducing expenditures and raising production quality. Large bonuses are paid to them for increasing output of production during the growth of its production cost. There is an urgent need to correct this shortcoming.

In sovkhoses, for example, for economizing direct expenditures bonuses of only 0.75 percent of the overall wage fund are paid and approximately 9 percent of the overall amount of bonuses paid; in kolkhozes it is 0.3 and 9 percent respectively. Admittedly, this shortcoming is being corrected. For example,

in the Put' K Kommunizmu kolkhoz as well as in the Ob', Verkh-Bekhtemirskiy, and Cherginskiy sovkhozes in Altay Kray the wage fund is being established for production subdivisions on a normative basis (per unit of gross production). During the year, workers receive no more than 65 percent of this fund and specialists receive minimum salaries reduced by 10 percent. The remaining part of the fund is paid according to annual results for production. Moreover, a limit is set for expenditure of physical resources calculated per unit of gross production. Fifty percent of economized funds are paid for economizing physical resources, 50 percent of overexpended amounts are withheld from the wage fund for overexpenditure. Such a quest deserves every kind of support.

Work experience in sectors of industry teaches that restoration of production cost planning, which is supported by extensive work in labor collectives, has played a positive role by ensuring reduction of production costs.

But the production cost of output is not being planned thus far in agriculture. Following the example of other sectors of the national economy it is necessary to examine this question and as it applies to agriculture to find the means of tangible control on the part of society over the flow of production expenditures. We believe that it is expedient for scientific institutions and planning organs to develop a normative production cost for kinds of production and natural and economic zones of the country. It can also be used for creating a scientifically substantiated system of purchasing prices.

Workers of agricultural economic service must become initiators of the struggle for reducing the production costs of output. Efforts of all specialists should be concentrated here and directed at enlisting every member of a collective in economical and efficient expenditure of funds. In calling upon to put an end immediately to wastefulness, the April (1985) plenum of the CPSU Central Committee stressed particularly strongly: "Apparently, slogans alone won't work--there were more than enough of them. It is necessary to raise demands on specific persons, including legislative ones, for the safety and correct use of all physical assets. It is necessary to organize proper order at every enterprise and construction site, in every kolkhoz and sovkhoz, and in every organization. It is out of the question to talk about any efficient management and growth of economic efficiency without this."

Interests of the matter require seeking stabilization, and then also a reduction in the production cost of output. Most effective improvement of purchasing prices will also depend on this. Their prognosis for the period up to 1990 confirms that fulfillment of the tasks pointed out in the Food Program for volumes of production and efficiency indicators even during stabilization of production costs for the output of basic kinds of agricultural production at the 1979-82 level would make it possible in the main to preserve the prices and surcharges to them now in force for the 12th 5-Year Plan.

Reduction of the production costs of output will make it possible to improve the present economic indicators of kolkhozes and sovkhozes and to create conditions for normal intraorganizational accounting. This will lead to the next stage in improvement of purchasing prices. Its main direction, like in industry,

must be systematic reduction of their level on the basis of acceleration of scientific and technical progress and industrialization and intensification of agriculture.

The Communist Party and the Soviet Government have now provided everything necessary for creating approximately equal management conditions for enterprises. With the aid of distributive relations and surcharges for low profit and unprofitable farms every RAPO has the possibility of regulating the level of production profitability on farms. Consequently, new prerequisites have been created for a real, more deeply substantiated improvement of the economic system of prices and rates. All links from labor collectives of farms to central management organs are now participating directly in improvement of economic management conditions.

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TILLING AND CROPPING TECHNOLOGY

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PROGRESS, PROBLEMS IN GRAIN-GROWING TECHNOLOGY DISCUSSED

Moscow SELSKOYE KHOZYAYSTVO ROSSII in Russian No 2, Feb 86 pp 35-37

[Article by A. Osadchuk, agronomist: "Toward New Frontiers"; similar articles by same author, see UAG-85-033, dated 30 Dec 85 and UAG-86-002, dated 16 Jan 86]

[Text] It is sometimes useful, to get a clearer picture of the future, to look back. We will begin our discussion of the future of intensive technologies with such an excursion into the recent past. This is made even more essential by the fact that the Russian Federation has been and remains one of the country's most important grain-growing regions, so the problem of increasing grain production, which is crucial for the entire USSR agroindustrial complex, is especially important for the people working in our republic's agriculture.

A great deal of work has been done in the republic in recent years to introduce scientifically substantiated crop farming systems at every kolkhoz and sovkhos. This work is to be concluded this year. This work assigns an important place to clean fallow land, whose area now reaches 14 million hectares. This land will make it possible not only to raise grain yield to a higher level and insure stable grain production, but also to significantly improve the quality of the grain, above all the wheats.

The farms of the republic are receiving mineral fertilizer, plant protection agents, and new equipment in ever-growing volumes. Scientific institutions in recent years have developed many new intensive varieties of grain crops that are capable of responding to improved farming practices with a corresponding increase in yield and improvement in grain quality. The qualifications of personnel are improving.

In other words, our grain system has laid the necessary groundwork for further intensification of production.

This is exactly what has made it possible to convert rapidly to intensive methods of raising grain. Already in 1985 these techniques were used in planting winter crops on more than 5.2 million hectares, including almost 3.4 million hectares of strong varieties of winter wheat and more than 1.3 million hectares of winter rye, chiefly the "Chulpan" variety. New technology was employed in planting spring wheat on more than 5.6 million hectares, more than 4.6 million of which are planted in strong and hard varieties.



So we have a right to view the results of the final year of the past five-year plan as the results of exceptionally important and broad-scale work to introduce progressive crop technologies in virtually all the grain-growing regions of the republic; these technologies are the most important available reserve for increasing the gross grain harvest, even in the case of extreme weather conditions.

It is no longer necessary today to convince anyone that large-scale incorporation of intensive technologies makes it possible not simply to increase the production of food and forage grain but also to achieve guaranteed growth in yield and quality, which means unquestionably to attain the goals outlined in the Basic Directions of Economic and Social Development of the USSR in 1986-1990 and the Period until the Year 2000.

At the same time, however, we cannot forget that the actual process of incorporating new technologies at the kolkhozes and sovkhoses demands an exceptionally thoughtful approach to this question by farm managers and specialists.

The results of the past year tell a great deal on this level. What did the use of intensive technology produce? The average yield of winter crops planted in the new way was 28 quintals per hectare, and following clean fallow it was 21.9 quintals. Spring wheat planted on clean fallow produced 18.4 quintals per hectare, while the second crop after fallow yielded 17.1. The advantages of intensive technology appear quite significant: some 5.5 quintals of grain from each hectare.

And then, this figure is the average for the entire Russian Federation. The gain was even greater, from 7 to 12 quintals per hectare, in many regions. It was especially noticeable in Rostov, Lipetsk, Kursk, Moscow, Tula, Ulyanovsk, and Belgorod oblasts and the Tatar and Bashkir ASSR's. Specialists calculated that a total of more than 5 million tons of additional grain was received through intensive technologies.

It should be noted particularly that the grain received from intensive farming was also better in quality. Suffice it to say that the republic overfulfilled its plan for sale of strong wheats last year. It also says a great deal that more than half of the wheat turned over to the state was accepted by the elevators as strong, hard (graded), and valuable wheat.

The conversion of grain farming to intensive technologies, like any major new undertaking, requires serious theoretical and practical preparation. That is why that farms received the necessary normative and methodological literature and organized personnel training long before field work began. The training courses were attended not only by production organizers -- the farm managers and specialists -- but also by the actual performers -- the machine operators and heads of subcontracting collectives. Agricultural organs kept an eye on questions of preparation for the introduction of intensive technologies and the actual process of introduction.

All this made it possible for almost every kolkhoz and sovkhos, when introducing the new methods, to devote maximum attention to the important matter of



selecting fields according to the farming system adopted and compiling "passport" descriptions of them. As a rule, appropriate agrochemical testing preceded application of organic and mineral fertilizers, liming and application of phosphorus, and weed and pest control.

For the Russian Federation as a whole, beginning in the fall of 1984 organic fertilizer was applied at a rate of 26 tons per hectare on fields with a permanent wheel track and 16 tons on clean fallow; the corresponding figures for mineral fertilizers were 144 and 87 kilograms of active matter per hectare. In all, considering spring and later top dressing applications, each intensive hectare of winter crops received 233 kilograms of active nutrient elements. Spring wheat received 19.9 million tons of manure and almost 500,000 tons of mineral fertilizer or 84 kilograms of active matter per hectare.

Special attention was devoted to the technology for applying the primary fertilizer. The republic has many dry steppe regions where this operation had to be done in the spring. But how could it be done in a very short time? A solution was found -- SZS-2.1 planters with special colters. By the start of spring planting 414,000 such devices had been fabricated, which made it possible to use them to apply mineral fertilizer on an area of about 2.4 million hectares. On the remaining area SZS-2.1 planters, KPG-2.2 and GUN-4 cultivators, and other machines were used to apply mineral fertilizer.

Management of the planted fields was also done in conformity with the requirements of technology. Extra-root top dressing was done on an area of 5.6 million hectares based on the results of fiber and leaf diagnosis. Some 1 million hectares were processed with retardants.

It would appear that everything possible was done to get the maximum impact. But the results achieved, for all their significance, cannot satisfy us: the variability of yield indicators was too great. This variability is even more strange when the very essence of the intensive technologies is to ensure high and, at the same time, fairly even indicators. In practice, however, the differences are very noticeable.

For example, the Orlovskiy Kolkhoz in Kirovskiy Rayon of Stavropol Kray harvested 52.6 quintals of winter wheat per hectare from 400 hectares of intensive fields last year. This was 15 quintals more than the farm got from fields with the traditional farming practices. The Rassvet Kolkhoz in Mikhaylovskiy Rayon of Volgograd Oblast harvested 47 quintals of winter wheat per hectare from 1,000 hectares, which was 10 quintals per hectare more than from its other fields. The Vpered Sovkhoz in Altay Kray raised 30 quintals of spring wheat per hectare on intensive-technology fields, which was more than double the yield achieved in the same year using the conventional technology. Smolenskiy Rayon of the same Altay Kray got 30.4 quintals of spring wheat per hectare from intensive fields following fallow, while on its other fields it harvested only 18.9 quintals per hectare. We should note in passing that this made it possible for the farms of Smolenskiy Rayon not only to surpass the plan for grain deliveries for last year by 1.5 times, but also to fulfill the assignment of the five-year plan by 116 percent.

Other examples could also be cited where competent application of intensive technology makes it possible not only to attain the projected yield, but even to exceed it.

But unfortunately, there are just as many examples of the other sort. Many farms and even entire regions got yields substantially lower than calculated on fields where intensive technology was employed. For example, the kolkhozes and sovkhozes of Penza Oblast harvested only 17.3 quintals of winter wheat per hectare from fallow fields. The average yield in Orenburg Oblast was also far below the calculated figure.

Such cases significantly undermine the reputation of intensive technologies and discredit them in the eyes of grain-growers. But it would not be fair to put the entire blame for this on local agricultural organs and farm managers and specialists who did not devote proper attention to the new innovation. We cannot overlook the fact that quite often the supplier of mineral fertilizers let our rural working people down. For example, 591,000 tons of mineral fertilizers were supposed to be applied to winter crops under the intensive technology in the fall of 1984, but at the beginning of large-scale planting only 428,000 tons were on hand. The farms of Stavropol Kray, for example, did not receive mineral fertilizers until 20 September. As a result the kolkhozes and sovkhozes were not able to apply 40,000 tons of nutrients on time. Farms in the Saratov region applied only one-fourth of the required norm for winter crops on time, while in the Volgograd and Penza regions it was one-half. Many places did not have enough mineral "rations" for spring planting either: farms in Novosibirsk and Kurgan Oblasts failed to receive, or more correctly received too late, 22,000 tons of mineral fertilizer apiece, and the kolkhozes and sovkhozes of Chelyabinsk Oblast were 17,000 tons short.

At the present time we are also still short of specialized equipment -- mobile liquid fertilizer mixing units, seed dressing machines, boom sprayers, and instruments and equipment for determining grain quality and for soil analysis. Some farms are even lacking such simple units as fertilizer crushers.

Farm engineering services have done a great deal in the last two winters to fill this gap. And we must say that where proper attention is given to preparations they are making considerable progress. The experience of the party, Soviet, and agricultural organs of Belgorod Oblast provides a good example of the business-like approach to questions of intensification: they have solved the problem of supplying farms with special equipment and attachments largely through their own efforts.

At the same time the machinery built at non-specialized enterprises often does not meet the requirements made by intensive technologies. Therefore, it is not just expedient but also necessary to solve this problem on a centralized basis on a republic scale and on a national scale.

It seems to me that setting up USSR and republic Goskomagroprom's [State Committees for Agricultural Industry] would accelerate the solution to this problem.

With this I would like to conclude the discussion of objective causes for the fact that the intensive technologies are still not sufficiently effective and move on to what might be called the subjective factors, whose elimination depends wholly on the organization of work in the local areas. I will stress immediately here that for a certain category of managers the existence of objective difficulties still continues to serve as a kind of veil behind which they have concealed their own poor management or ignorance of the work. The policy adopted by the party of allout furtherance of the principles of cost accounting and sharply improving agriculture through intensification demands that farm managers and specialists fundamentally restructure their style and methods of economic and technological management, above all that they be more demanding of themselves.

It is no secret that the reason for failures in introduction of intensive technologies are often not only and not so much shortcomings in material-technical supply as they are poor personnel training. And this is not a question of lack of knowledge: each one of the 210,000 working people has gone through the special course in intensive technology and received all the necessary information. The point is something else. The baggage of conventional ideas based on traditional farming practices has led many to underestimate the fundamental novelty of the intensive model, and as a result they have been unable to use the knowledge obtained competently.

Intensive technology demands high general farming sophistication and precise compliance with all prescribed actions, which are rigorously correlated with local natural and climatic conditions. Changing the time, or even worse skipping any activity, even the seemingly most insignificant one, can greatly lower the impact of all the rest of the work. In analyzing the results of the year, we could not fail to observe that precisely this situation was usually the reason for failure.

The Pravda Kolkhoz in Topchikhinskiy Rayon of Altay Kray fertilized its intensive fields without looking at the nutrient requirement appropriate to the assigned yield and to soil quality. As a result they overdid the nitrogen and forgot to add potassium. They also forgot the retardants, as a result of which a significant share of the intensive fields became lodged in the grain-forming phase. Rust developed on the plants. The result was predictable: the yield was barely half of the projected figure.

And here is a direct comparison. At the Kolkhoz imeni S. M. Kirov in Arskiy Rayon of the Tatar ASSR they received yields differing by almost a factor of two, 27 and 49 quintals of grain per hectare, from two absolutely identical fields planted with "Chulpan" rye. The reason was that in the latter they left a track which made it possible to carry out crushed nitrogen top dressing along with the application of pesticides and retardant processing, while in the former field there was no track. Therefore, they were not able to conduct these operations.

Other examples could also be given of the "soft," to put it mildly, approach to introduction of intensive technologies. Most of the farms in Mikhaylovskiy Rayon of Volgograd Oblast, for example, did not carry out pest and disease

control measures to protect the crops and did not do extra-root top dressing which, of course, has a marked effect on grain quality. As a result they only fulfilled the plan for turning over strong wheat to the state by one-half, even though the assignment given to the rayon was not what you would call a hard one: all they were supposed to do was raise a little more than three percent strong wheats in the gross harvest.

Serious conclusions for the future should also be drawn from the cases which occurred of planting seeds known to be in poor condition. In Kemerovo Oblast, for example, more than half of the spring wheat area last year was planted with grade No 3 seed. Low-quality seed was also used for a significant part of the spring grain area cultivated by intensive technologies in Krasnoyarsk Kray, Volgograd Oblast, and a number of other regions.

The scope of application of intensive technologies is broadening considerably this year. The area planted to winter crops has been increased to 8.7 million hectares. Intensive spring crops will occupy roughly the same area. Plans call for receiving about 8.5 million additional tons of grain from the winter crop area alone. And we must say that the second fall planting on the intensive model was done in a more organized and skilled fashion than the first.

But now it is just a matter of days until the spring season. And it is very important now for every farm to carefully check its readiness for spring one more time so that the entire series of spring field jobs on intensive-technology fields is done at optimal times. Everything possible must be done to realize the potential of the intensive technologies to the fullest extent, to achieve the planned increase in gross grain harvests.

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## TILLING AND CROPPING TECHNOLOGY

### EMPHASIS ON HUMAN FACTOR URGED

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 10 Jan 86 p 1

[Editorial: "The Main Factor in Yields"]

[Text] Every time the fields produce generous yields, we praise grain growers' mind and hands, knowledge and diligence. Without them, the land cannot be cultivated, no matter how fertile it is. If the fields don't give good crops and the expected harvest is not gathered in the fall, the agronomists and brigade leaders complain that it has not rained for 2 or 3 months or that spring was drawn out and cold. The bad harvest is attributed to unfavorable weather.

The grain grower's art consists in obtaining a harvest no matter what the weather conditions are. This is said by Academician Terentiy Semenovitch Maltsev. It is proven by the practical work of many sovkhoses and kolkhoses in our republic. For three five-year plans in a row farmers at the Voskhod Sovkhoz in North Kazakhstan Oblast have averaged 20 quintals per hectare. Grain growers at the Zlatopolskiy Sovkhoz in Kokchetav Oblast have done the same for many years. There are stable indicators for grain production at the Karabalyskaya Agricultural Experiment Station and the Stantsioniy Sovkhoz in Kustanay Oblast, the Vyshnev Production Association for Poultry Production in Tselinograd Oblast and at many other farms.

Aleskey Semenovitch Yermakov, director of the Voskhod Sovkhoz and delegate to the 27th CPSU Congress is completely justified in saying that the size of the harvest depends not so much upon weather conditions as upon farming standards, upon people's attitude towards the land and their job. After all, in the virgin lands and other soil-climatic regions in the republic, sovkhoses and kolkhoses find themselves in similar conditions, but obtain different results. Differences in yields are also observed within a single farm.

As a result of many years of search by scientists, agronomists and skilled crop production workers, a zonal system of agriculture has been created in the republic, the factors contributing to yields have been clearly defined and the magnitude of yields has been modeled not only for irrigated agriculture, but also for farms raising unirrigated crops. Sovkhoses and kolkhoses are now well equipped and better supplied with mineral fertilizers and chemicals. For the third year scientifically based norms for clean fallow have been observed.

This made it possible to grow wheat by intensive technology on large areas last year. This year 5.5 million hectares of grain will be grown using new methods. The introduction of intensive technology has increased yields. For example, in Kokchetav, Kustanay and North Kazakhstan oblasts, 4-5 quintals more per hectare were obtained from intensively managed fields than from all other fields. However, the expected effects have not been obtained everywhere. An analysis of reasons for the shortfalls in yields shows that at many farms and rayons technological discipline has been violated -- mineral fertilizers and herbicides were incomprehensively used, dosage rates fell below norms, planting deadlines were not met and seed quality was not high everywhere.

At a conference on questions of the agro-industrial complex, M. S. Gorbachev said that at this stage the basic question is the observation of technological discipline on the fields. Agriculture needs the same technological disciplines as, for example, the smelting of iron or steel: if there are errors, metal quality will change. In order to obtain the maximum effect from intensive technology it is necessary to have skilled personnel. Their professional training has not been good everywhere.

At the present level of agriculture's scientific-technical development the human factor has become a primary one in yields: grain growers' skill, honesty, conscientious discipline, the progressive organization of production, labor and its payment. It is no accident that last year those collectives which had switched to brigade contracts were the first to be entrusted with intensive crop production technology. However, for various reasons, not all of them succeeded in obtaining optimal yields. The details of the new technology were not completely worked out, there was a shortage of specialized equipment for applying mineral fertilizers and herbicides and insufficient coordination between partners in the agro-industrial complex. In preparing for the new harvest, rayon agro-industrial associations should first of all eliminate these organizational shortcomings.

Taking experience into account, it is now planned to increase the return from intensive fields and thereby gather at least 3.3 million tons of additional grain. Preparations for this must be made right now. Simultaneously with agrotechnical work, it is also necessary that the training of machinery operators, brigade and link leaders be organized in each rayon and on each farm. These exercises should pursue the goal of giving growers maximum knowledge of the basics of intensive technology.

At the conference in Tselinograd it was stated that during the 12th Five-Year Plan the use of intensive technology to grow grain crops must be given top priority. There can no longer be work by the plant and harvest principle, the yield must be cultivated. This requires precise and intelligent work. Agronomists should be the organizers of such work.

The lack of agronomic control is often the basic reason for violations of technical discipline. Up until recently managers and specialists at many farms explained the low yields by insufficient fallow in the crop rotation. At present one-fifth of all republic's total grain land is in fallow. However, this does not always give good results. At some farms yields are even lower after fallow than after other predecessors.

Fallow is the basic component in the scientifically based crop rotations used in the virgin lands. Weed free, well maintained and fertilized fallow produces 30 and more quintals per hectare in good years. Even last year, which was by no means good with respect to weather conditions, progressive brigades at, for example, the Karabalyaskaya Station and the Komsomol Poultry Factory in Kustanay Oblast, the Voskhod and Karagandinskiy Sovkhozes in North Kazakhstan Oblast and others obtained such yields. At the same time there are farms where no more than 10 quintals per hectare are obtained after fallow. There is one reason for this -- there was no genuine work on the "repair field."

Constant, well thought out work on the land, this is not only a requirement, but also the conscience of the grain grower. One cannot monitor every machine operator. The collective itself should educate them in the knowledge that the harvest and final results depend upon their high quality, conscientious work. The new way of organizing labor -- the unregulated unit on complete cost accounting, opens this possibility. The human factor and the understanding that in the struggle for a high yield not one operation is to be neglected should be at work here.

Nevertheless, as grain growers often write to the editors, not all managers and specialists create the conditions for normal operation. Some violate contracts with collectives and use people and equipment for work not covered by agreements. The responsibility of the director, agronomist and brigade leader in solving production questions is also a condition for the more complete manifestation of the human factor in work efficiency.

Increases in grain production and procurement are an important task facing Kazakhstan's rural workers in the forthcoming five-year plan. The key to its solution is the intensification of crop production, and increases in the returns from the land. There are many factors in a high yield, but it is essential to understand that they become human factors. In the struggle for yields, the agrotechnical and human factors must be put on an even footing. Armed with experience, knowledge and scientific-technical achievements, growers will be the creators of large amounts of grain!

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## TILLING AND CROPPING TECHNOLOGY

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### SEED GROWING FUNDAMENTALS IN URALS DESCRIBED

Sverdlovsk URALSKIYE NIVI in Russian 11 Nov 85 pp 18-20

[Article by S. Chazov, head, Department of Selection and Seed Growing, Sverdlovsk Agricultural Institute, professor; P. Brevnov, chief, Department of Seed Growing, Sverdlovsk Oblast Agricultural Administration; and V. Yeliseyev, senior agronomist, Department of Seed Growing: "The Organizational Principles of Commercial Seed Growing in the Urals"]

[Text] Intrafarm specialization in seed growing began to be introduced back in the 1960's. In it, at each kolkhoz and sovkhoz there should be specialized brigades and departments which grow varietal seeds sufficient to fully meet the farm's own requirements, and to fulfill procurement plans for state resources.

The Urals are characterized by broad agroclimatic diversity. This is manifested in various solar radiation and thermal regimes, in precipitation and in the beginning and duration of the vegetative period. According to data for several years, the northern and mountainous regions of the Urals (Perm and Sverdlovsk oblasts) have total positive temperatures during the 10 degree period ranging from 1,200 to 1,600 degrees C and GTK [hydrothermal coefficients] of 1.4...1.9, and the frost free period is from 70 to 100 days. In the steppe regions of the southern and southeastern Urals (Chelyabinsk and Orenburg oblasts) the sum of positive temperatures during this period ranges from 2,400 to 2,600 degrees C and the GTK is 0.6...0.9. There is an increased incidence of dry winds and droughts. Even within oblasts in the Urals there are quite substantial variations in heat and moisture supply. This results in grain with differing seed qualities.

In this huge region, covering the tundra in the north and the dry steppes in the south, a goal was set to determine zones of optimal seed growing, and to establish regions not suitable for producing certified seed every year.

Such research began in 1970 in Perm Oblast and is now continuing in Sverdlovsk, Chelyabinsk and Orenburg Oblasts. (See table)



# Ecological Diversity in the Quality of Urals Spring Wheat and Barley Seed

Seed Growing Zone	Laboratory Germination rate (%)	Initial Growing Energy Number of Spouts	Weight per 100 sprouts (grams)	Field Germination rate (%)	Yields q/a
<hr/>					
Perm Oblast (4 year average)					
Norren Wheat					
northern (taiga)	89	84	5.5	55	25.6
forest-steppe	93	91	6.6	70	28.9
Standard normal distribution 0.05	--	--	--	--	0.3-1.9
 Sverdlovsk Oblast (3 year average)					
Srednural'skaya Wheat					
mountain-forest	93.3	85.7	10.4	82.1	23.8
forest-steppe	97.5	94.8	12.0	90.0	25.5
Standard normal distribution 0.05	--	--	--	--	1.4-1.5
 Moskovskaya-35 Wheat					
mountain-forest	85.3	79.0	10.6	68.4	26.3
forest-steppe	97.4	93.2	12.1	86.2	32.6
Standard normal distribution 0.05	--	--	--	--	1.6-5.3
 Krasnoufimskiy-95 Barley					
mountain-forest	92.0	85	7.0	80	57.1
forest-steppe	98.0	95	8.0	90	59.2
Standard normal distribution 0.05	--	--	--	--	0.9-1.6
 Chelyabinsk Oblast (4 year average)					
Lade Wheat					
mountain-forest	94	89	6.8	72	35.3
southern forest- steppe	98	91	8.3	81	37.9
Standard normal distribution 0.05	--	--	--	--	0.8-2.1

[Table, continued]

Ecological Diversity in the Quality of Urals Spring Wheat and Barley Seed

Seed Growing Zone	Laboratory Germination rate (%)	Initial Growing Energy		Field Germination rate (%)	Yields q/a
		Number of Spouts	Weight per 100 sprouts (grams)		
Strela wheat					
northern forest- steppe	96	98	8.5	73	38.8
southern forest- steppe	99	97	11.2	79	40.2
Standard normal distribution 0.05	--	--	--	--	0.9-1.2
Krasnoufimskiy-95 Barley					
mountain-forest	93	88	8.2	62	39.3
southern forest- steppe	98	96	9.5	82	45.5
Standard normal distribution 0.05	--	--	--	--	1.8-3.5

This research was conducted for three spring grain crops (wheat, barley, oats) and, in Orenburg Oblast, for millet and Sudan grass.

From the table it is obvious that the taiga (northern) and mountain forest regions of Perm, Sverdlovsk and Chelyabinsk, the northern forest-steppe of Chelyabinsk and Orenburg oblasts are the most unfavorable for producing seed wheat with good yield qualities.

In Perm and Sverdlov oblasts, even the laboratory germination rate in the indicated seed growing zones varied by 4...12 percent, including 4...5 percent for early maturing seed and 11...12 percent for midseason maturing seed. In the determination of initial growing energy this difference also increased for field germination and ranged from 8 to 18 percent. For Moscow-35, a midseason maturing variety, it was at a maximum. During these years the availability of heat in the northern regions of Chelyabinsk Oblast was less favorable than the multi-year average. Therefore, differences in laboratory germination rates were minimal. However, an analysis of all data indicates that laboratory germination rate is not a full characteristic of seed quality. Even germinative energy in these two oblasts during unfavorable seed growing conditions was 6...13 percent lower in Lade wheat. Because of this there were substantial differences in the energy of initial growth, while field germination rates differed by approximately the same amount as germinative energy.

The seed with the best yield qualities was from the forest-steppe zone of Perm and Sverdlovsk oblasts, the southern forest-steppe of Chelyabinsk Oblast and the central forest-steppe of Orenburg Oblast.

The barley experiment was conducted in two Urals oblasts (Sverdlovsk and Chelyabinsk). For this crop also, the most unfavorable were the northern (taiga and mountain forest) regions, while the most favorable were the Sverdlovsk forest-steppe and the Chelyabinsk southern forest-steppe.

In addition to determining seed planting qualities and yields in the Urals there were also observations of pollen formation, the anatomical-morphological structure of grain and the physiological-biochemical evaluation of seed grown in various ecological conditions (Sverdlovsk Agricultural Institute).

All these observations to a considerably extent explain the causal linkages in the variability of seed yields in an ecological perspective. In addition to biological research to find the organizational basis for seed growing, there were also calculations of the economic efficiency of hauling seed from optimal zones to zones of unguaranteed seed growing.

Calculations were made for specific farms in the Urals. For example, in Sverdlovsk oblast the use of oats seeds hauled in from the forest-steppe in the northern regions (the Kashayskiy Sovkhoz) produced 12 rubles 60 kopecks of conditional net income per hectare.

The results were taken into account in organizing industrial seed growing in Urals oblasts. Oblast party and soviet organs in the zones for optimal (stable) seed growing chose specialized seed growing farms which were to supply northern and mountain regions with seed.

With the establishment of a new system for agriculture's management (the agro-industrial complex), in recent years the scheme for seed growing in Urals oblasts has been re-examined. (See scheme)

Urals Scientific Research Institute  
for Agriculture (5 elite farms)

Elite in the First Reproduction

Farms growing seed for northern and mountain regions	Rayon seed growing farms	11 seed farms for grass
State resources (for northern and mountain regions)	Seed growing departments and brigades at rayon farms (seed sections)	Seed growing stations and and all farms in oblast

This is how it appears in Sverdlovsk Oblast (approved by decisions of the Sverdlovsk Oblast Soviet of People's Deputies in May 1983).

Three basic directions have been determined for grain crop seed growing. The first is regionalized seed growing farms. Their task includes the propagation of elite seed for grain and pulse crops up to the first and second reproductions and their sales in accordance with an approved plan for varietal renovation and replacement for all farms in the region once every five years to completely supply seed from seed growing departments or brigades (seed sections). This makes up one-fourth of total demand for grain seeds and one-third of pulse seed at each farm. From 1 to 4 specialized seed growing farms have been set up in each rayon, depending upon the size of the area planted, the condition of the material-technical base and a number of other circumstances.

For this work to be conducted in a planned manner, three documents (accounts) are drawn up for each rayon: annual demand for elite seeds and first reproduction seeds (seed sales plan for rayon specialized seed farms); each farm's demand for first reproduction seeds; the rayon plan for variety renovation and replacement, which is given to each farm.

The second direction for grain and pulse seed growing delineates specialized seed growing farms (the Tavrinskiy and 50 Years of the USSR Sovkhozes). Their task is to produce grain and pulse varietal seeds for northern and mountain regions in the oblast.

The third direction in grain and pulse seed growing (it is not included in the scheme) is the production of seeds for scarce and promising varieties by base farms' seed sections, which have been given production and sales plans.

The introduction of the new system of seed growing in Sverdlovsk Oblast began in 1984. Jointly with the Department of Selection and Seed Growing at the Sverdlovsk Agricultural Institute, the Oblast Administration's Seed Growing Department developed and gave to all rayon agricultural administrations and seed growing farms a methodology for calculating seed growing areas and compiling varietal renovation and replacement. They then worked out conditions of socialist competition for grain and pulse seed growing farms and specialized seed farms and seed growing stations for perennial grasses. The Tavrinskiy Sovkhoz in Krasnoufimskiy Rayon won first place in the socialist competition among seed farms for growing grain crop seeds. It obtained more than 50 percent certified seed in its gross harvest and fulfilled, by 240 percent, its plan for the sales of grain and pulse seeds in the first and subsequent reproduction. Output of first reproduction seed per hectare was: grain -- 13.1, peas -- 10.3 and vetch -- 6.0 quintals per hectare. It also fulfilled the plan for stockpiling winter and spring grain and pulse seeds in the main, insurance and carry-over stocks.

The collective at the Tavrinskiy Sovkhoz was given bonuses totaling 1,000 rubles, and given rights to buy, without waiting, UAZ-469 cars. The chief agronomist, S. K. Yegorshin, was given a monetary bonus.

Among the grain complexes, the victor was the collective at the grain base for the Zarya Sovkhoz in Achitskiy Rayon -- 50.5 percent (3,387 tons) of its gross

harvest was certified seed. Grain base brigade leaders and 15 shift leaders were given bonuses.

In 1984, the following farms worked better than others and overfulfilled their plans: the Tavrinskiy and 50 years of the USSR Seed Farms in Krasnoufimskiy Rayon, the Zarya Sovkhoz in Achitskiy Rayon and the Aromashevskiy Sovkhoz in Alapayevskiy Rayon. Targets were not met by the Yuvinskiy, Byngovskiy, Nevyanskiy, Glinskiy, Nitsinskiy and Sladkovskiy Sovkhozes, which did not sell a single quintal of seed to farms in the region. Some of their crops died and they could not even supply themselves with elite planting material.

The obispolkom targets were not fulfilled by Bogdanovichskiy and Shalinskiy Rayons, where elite seeds were sold to all farms, but not to seed farms.

Seed growing farms mainly involved in producing seed grain for northern regions, have, for the most part, handled their jobs. However, grain receiving points have not accepted these seeds. They must be sold directly to customer farms.

One should note that in July 1984 the Oblast Agricultural Administration published an order concerning seed stockpiling in the interrasyon insurance stocks. However, only 2 out of 8 administrations indicated in the order have done this: Krasnoufimskiy and Achitskoye, while Kamyshlovskiy has partially done it. As a whole, the seed stockpiling plan for the exchange stocks was only 37 percent fulfilled.

Base farms have not received clear instructions on the production and sales of scarce and promising varieties. They are not capable of doing this. As a result, an important direction in seed growing is still being ignored.

For many years the results from seed growing in the oblast have pointed to the need to create a permanent oblast insurance stock of seeds. It should be organized through the production of seeds in rayons favorable for growing them (the eastern and western forest-steppe) and at specialized seed growing farms, following the example of Lvov Oblast in the Ukraine. These farms -- seed enterprises -- should keep their own accounts and be directly subordinate to the Oblast Agricultural Administration. The oblast insurance stocks should be 50 percent of requirements for grain and cereal grasses and 100 percent of pulse crops. It is also necessary to constantly strengthen seed growing's material and technical base.

These two essential conditions will assure the steady availability of seed year after year and a high percentage of the best new regionalized varieties.

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## TILLING AND CROPPING TECHNOLOGY

### KUSTANAY PREPARATIONS FOR INTENSIVE TECHNOLOGY OUTLINED

Moscow SELSKAYA ZHIZN in Russian 12 Jan 86 p 1

[Article by N. Detkin, deputy department chief, Kustanay Oblast Agroprom: "On the Intensive Fields of the Virgin Lands"]

[Text] It is still a long time until the beginning of spring field work, but Kustanay grain growers are making extensive preparations for consolidating the experience they have acquired in intensive technology on the grain field, in avoiding errors and increasing the yield from each hectare. During these winter days more than 11,000 machinery operators in agrochemical study circles are studying the specifics of growing grain crops with progressive technology. Brigade leaders and section agronomists have undergone retraining. RAPO and kolkhoz chairpersons and sovkhos directors are attending classes at the Kustanay Scientific Research Institute for Agriculture. Training is now closely linked to practical work. Snow retention work has been performed on more than 4.5 million hectares. This work has already been done twice on fields intended for grain growing by intensive technology. Seed cleaning is being completed and the next task is to improve spring crop seeds to the first and second class. Farms are continuing the application of organic fertilizer, in all, 150 soil fertility detachments are operating in the oblast.

Grain growers in the virgin lands must work under difficult conditions. A zone of risky agriculture dictates its own laws and makes harsh demands upon grain growing. Nevertheless, it is quite realistic to obtain high and stable returns from each hectare in our region. The potentials of the virgin lands are still far from completely utilized. This is supported by the first experiment in the use of intensive technology for wheat growing.

As is known, last year's weather did not pamper us. All the same, thanks to technology, we obtained a substantial increase in high quality grain production -- about 500,000 tons. An additional 4.5 quintals of grain were harvested from each of 1,100,000 hectares. The highest yields -- 19.2 to 20.1

quintals per hectare, were obtained by farms in Uritskiy, Fedorovskiy and Borovskiy rayons.

If one were to graphically depict yields from the Kustanay fields, then one would see a jagged line with sharp changes. Obviously, one cannot ignore frequent droughts which negatively effect returns from the fields. However, it isn't only a matter of the weather. Up until recently at the majority of farms the agronomic techniques for growing grain crops, above all soft wheat, were, to put it mildly, not in tune with the basic demands of science and progressive practice.

The main thing is that fallow has been neglected for a long time. Thus, in 1975, only 5 percent of the land tilled was in fallow. This had hardly increased by the beginning of the 11th Five-Year Plan. It is fully understandable that in such a situation one could not seriously expect stable, to say nothing of high yields. Of course, there could be no talk of introducing intensive technology. It therefore became obvious that it was necessary to make fundamental changes in grain growing.

Beginning in the first year of the 11th Five-Year Plan, party, soviet and agricultural organs sought to bring order to the land. By 1985 fallow had increased to 18.7 percent of crop land. Thanks to this it became possible to introduce and master scientifically based short pattern crop rotations. By 1980 they had been 66 percent mastered and by 1985, 94 percent. The main areas planted to wheat now follow good predecessors, assuring yields which are not bad.

Virgin land grain growers are people who have grown wise by experience. Nevertheless, in setting about mastering intensive technology we are giving serious attention to the training of cadre. Without an intelligent, creative approach to the matter it is difficult to master the new. Farm and middle link managers, agronomists and machinery operators have received and are now receiving retraining. In all rayons there are seminars demonstrating the equipment and machinery for the introduction of contemporary technology. Jointly with the Kustanay Scientific Research Institute for Agriculture, the Oblast Agroprom is making recommendations for intensive technology.

The optimal times for planting wheat here are from 15 to 25 May, however, yields are greatest if it is planted between 18 and 24 May. It is during these latter days that farms plant areas to be grown by intensive technology. The question arises, why so strictly regulate planting times? Spring in our region is usually prolonged and cold. Stretching out the planting time helps in effectively fighting annual weeds (especially wild oats) and in making maximum use of precipitation falling in the second half of July and the beginning of August.

There is a differentiated approach to seeding rates. There are three soil and climatic zones in the oblast. Depending upon the features of each hectare, from 2.5 to 4.2 million sprouted seeds per hectare have been planted. They all met the requirements of first and second class planting standards and were not below the third reproduction.

Varieties play a great role in dryland crop production. Unfortunately, for our zone there is still not a wheat which could exceed the yields of Saratovskaya-29. The transition to intensive technology makes more acute the problem of a wheat variety for the entire region. We need an intensive variety which would guarantee high and stable yields if all agronomic requirements were observed.

The need to introduce intensive technology has presented growers with the difficult task of rationally using the chemicals. The main share of mineral fertilizers arrived at farms in the Fourth Quarter of 1984 and the First Quarter of 1985. This causes difficulties.

Expansion in the area of intensive production requires increases in the dosage rates of mineral and organic fertilizers. It appears that the difficulties which we encounter have also caused concern to farmers in other oblasts. Farms have very little special equipment for applying powdered fertilizers. During the summer, when fallow is worked, SZS-2.1 drills must be used. They quickly wear out and farms have additional outlays to replace them. Industry should more quickly expand the production of GUN-4 machines. Neither are there enough machines for preparing fertilizer, loaders for fertilizer spreaders and drills or organic fertilizer spreaders.

For the first time, in 1985 we obtained the triallat and avadesk herbicides, which were used on 81,000 hectares. These herbicides were highly effective, reducing weed infestation by 85-90 percent

It would seem that one could only be happy about a new means of fighting weeds. However, we immediately had to think about what equipment should be used to apply the herbicide to the soil. Wide span boom sprayers were needed. As there were not any, farms themselves had to build them. Great help was rendered by industrial enterprises in the oblast, which built atomizers. The pump situation was more difficult. Rural handymen found a solution here, but there should have been more help from industry. Measures should be taken to expand the production of OPSh-15 type equipment.

The use of intensive technology opens promising prospects. However, returns per hectare can be increased only if all agronomic requirements are observed. Contemporary technology is unique, and, obviously, a very precise indicator of the competence of farm agronomists and managers and their exactitude and ability to organize work.

The first experience in the introduction of intensive technology shows that there is no other way to increase the power of each virgin land hectare and to obtain stable yields. Therefore, farms in the oblast, the RAPO and the Oblast Agroprom are attentively and thoroughly analyzing last year's results and are outlining specific measures to eliminate shortcomings. Intensive technology requires raising, to a new, qualitatively higher stage, the work of farm managers, agronomists and rank and file workers.

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## FORESTRY AND TIMBER

### TERMS OF 1986 TIMBER INDUSTRY ECONOMIC EXPERIMENT

Moscow LESNAYA PROMYSHLENNOST in Russian 28 Dec 85 p 2

[Article: "A Step into Tomorrow"]

[Text] The draft for the Basic Directions makes provisions to convert, during the 12th Five-Year Plan, all sectors of the economy to the new operating conditions. Since 1984 such an experiment has already been under way in a number of sectors. The first steps in this direction are also being taken in the timber industry. On 1 January 1986 a broad scale economic experiment begins. Its goal is to increase output and improve quality on the basis of scientific and technical progress, to develop creative initiative and increase the interest of labor collectives in improving production efficiency and to strengthen cost accounting. It includes:

The BSSR Ministry of the Timber and Wood Processing Industry;

The LiSSR Ministry of the Furniture and Wood Processing Industry;

The Tsentrrombel [Central Furniture], Karellsprom [Karelian Timber Industry] and the Tyumenlesprom [Tyumen Timber Industry] All-Union Production Associations;

The Balakhninskiy Cellulose-Paper Combinat.

What changes will the experiment make in operating methods?  
We will explain them in order.

### PLANNING

The role of enterprises in the formation of plans is to be intensified and there will be increases in their responsibility for more completely meeting the national economy's and the public's demand for the products they produce.

The number of plan indicators approved from above is to be reduced by more than two fold. Henceforth the following indicators are established in annual plans:

Volume of output sold;

Production, in physical units, of basic types of output, including output for export;

Targets for the development and introduction of new technology and equipment;

Output in highest quality category as a percentage of total output;

Growth in labor productivity (for commercial output);

Wage fund for nonindustrial personnel;

Limiting level of outlays per ruble of commercial output;

Profits;

Limits on centralized state capital investments, construction-installation work and the operational introduction of production capacity and facilities through the use of such;

Funds for the basic types of material-technical resources and targets for reductions in their expenditure norms;

Norms for allocations, from calculated profits, to the state budget -- for production associations (enterprises);

The normed relationship between growth in average wages and labor productivity;

Eliminated are: value unit targets for production volume, normative net product and a number of others.

In addition to these annual indicators, the five-year plan includes: growth rate of commercial output and norms for the formation of the production development fund. The wage fund for workers at newly introduced enterprises and facilities, the material incentives fund for existing enterprises, the sociocultural measures and residential construction fund are stipulated separately in the five-year and annual plans for enterprise economic and social development. Norms for the formation of a single fund for the development of science and technology are introduced for ministries.

The norms set in the five-year plan are not subject to change or re-approval.

As can be seen, a leading role in the plan is held by qualitative indicators, in the development of which the normative method is used. Managers and labor collectives now have an interest in solid growth in the plan, and in striving

to overfulfill it. Appeals to live well, create growth and improve product quality are directed to each collective participating in the experiment.

#### RIGHTS AND RESPONSIBILITIES

There are to be expansions in the rights and operational independence of experiment participants. At the same time their own responsibility for the results of their work, first of all the observation of contracts, is to be strengthened.

The economic activity of production associations (enterprises) is evaluated in summing up results of work and socialist competition. Above all, attention is focused on the fulfillment of the following plan targets:

Output sales volume in accordance with contracted deliveries (especially strict account is given to obligatory deadlines, assortment and quality);

The development of science and technology;

Improvements in output quality;

Increases in labor productivity;

Reductions in prime cost;

Operational introduction of new production capacity and facilities.

One of the experiment's main tasks is to accelerate the introduction of new equipment, increase the pace of technical reequipment and reconstruction and the realization of scientific-technical programs. The following is becoming the most acute: concern about the mastery of new types of industrial production, the application of progressive technology, the use of all potentials for production mechanization and automation, the rational consumption of resources allocated to enterprises from the ministry fund for the development of science and technology. Outlays for the mastery of new technology will be included in the plan for industrial output sales, and not, as previously, in its prime cost. If this indicator is not met, the actual output sales figure will be reduced by the total nonfulfillment of new technology measures.

The experiment puts associations (enterprises) in conditions in which they have an interest in increasing output, using minimal material and labor resources, and in the development of their own production through their own and borrowed resources. The principles for the use of these funds are subordinated to just these tasks.

Thus, ministries and VPO's have been given the right to independently dispose of production development funds, intended mainly for the technical reequipment and reconstruction of enterprises. Those who want to have "pocket money" for the needs of production reconstruction and expansion should first earn it. A strict norm links this fund to the amount of enterprise profits. If the fund is not large, one can turn to subsidized bank credit.

If a production association (enterprise) has above norm reserves of uninstalled equipment or material-technical valuables not credited by a bank, it will make an additional payment of three percent of the value of such items to the state budget

More freedom of action is given in the disposal of funds for wages, material incentives, sociocultural measures and residential construction. However, these are spent upon agreement with labor collectives.

Authorization is given to switch some of the material incentives funds to related enterprises and contracting organizations in order to stimulate timely deliveries of high quality raw materials, other materials and accessories and to speed up work on the technical reequipment of active production operations.

Ministries and VPO's have the right to authorize subordinate PO's (enterprises) to sell, at their discretion, up to 50 percent of their above plan production-technical output, on the condition that they fulfill their contractual obligations for deliveries of this output, and to supply trade organizations with mass consumption goods manufactured in a planned manner, in accordance with signed contracts, and which the customer refused. Their sales are counted towards the fulfillment of delivery plans. One must assume that a market will always be found for good products.

Thus, the experiment creates conditions in which production managers are obligated to live "by their wits" and to show initiative and entrepreneurial behavior. It is fitting to note that managers' [khozyastvennik] sluggishness is now far more threatened by sanctions than it was previously.

#### STIMULI AND FUNDS

Under the new operating conditions there is an increase in the role of material stimuli and payments to labor in improving the qualitative indicators of enterprise activity.

This opens the possibilities of strengthening the interests of the labor collective and each worker in the results from their activities and in improving labor productivity.

Wages and material incentives funds now depend completely upon final production results and improvements in efficiency.

The wage fund is formed from the total wage fund for the base year plus an additional fund, calculated by a norm for each percent growth in commercial output.

Under the experiment, savings in wage funds remain at the enterprise. The administration, upon the agreement of the trade union committee, is given full powers to use it to increase additional payments for high professional skills as follows: up to 12 percent of wages rates for workers in category III, up to 16 percent for those in IV, up to 20 for V and to 24 percent for VI. Additional payments are established for the mastery of more than one

profession, and for highly skilled workers employed in especially important and responsible work, salaries are increased up to 250 rubles.

Raises (nadbavki) of up to 50 percent of the position's salary can be given to highly skilled ITR (engineering-technical personnel) and employees, and, if the enterprise or association achieves good final results, to managers.

Importantly, raises and additional payments to management personnel are not included in the limiting allocations for maintaining the apparatus.

The size of the additional payments and raises is determined on the basis of each worker's personal contribution to the collective's labor. If work indicators deteriorate, these payments can be reduced, or halted completely.

The material incentives is made up of its base year figure and increments for each 1 percent reduction in outlays per ruble of commercial output. Fund formation indicators for logging associations (enterprises) can use other data which more accurately describe the efficiency of their work (growth in labor productivity, production of commercial timber, etc).

The size of allocations to this fund depends upon:

Fulfillment of output sales, including delivery obligations; for each 1 percent underfulfillment the fund is reduced 3 percent, if contracts are completely fulfilled the fund increases by 15 percent;

Growth in the production of mass consumption goods per ruble of wages fund;

Additional profits obtained through incentives markups on retail prices of improved quality mass consumption goods and on the wholesale prices of production-technical items with the State Mark of Quality.

One of the new principles in awarding bonuses to workers is the switching from one bonus for several indicators to several bonuses for each work indicator, that is, to factor bonuses. Bonuses for basic work indicators are paid to enterprise and association management workers only upon fulfillment of the planned targets for output sales, including contract delivery obligations.

If quarterly plans and targets for the mastery of new technology and progressive experience are unfulfilled, management workers bonuses will be reduced by at least 25 percent. This will be a stricter demand than at present.

The USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry is authorized to use its reserve to award bonuses to workers at logging production associations. These are up to 1.5 fold above bonuses and are for fulfillment of annual plans and additional targets for producing commercial timber.

The fund for sociocultural measures and residential construction consists of its planned base year component and allocations of an additional 4 percent for each percent growth in labor productivity over the base year. The ministry and

VPO's are authorized to differentiate this norm, depending upon enterprise requirements for housing and childrens kindergartens.

In order to attract highly skilled workers, association (enterprise) administrations are authorized to, upon agreement with labor collectives, keep at their disposal up to 15 percent of the housing area built by resources from their funds.

Ministries of union republics and VPO chiefs are given the right to approve tables of organization for the central administration in their department without observing the ratio between the number of specialists in their wage fund and the established number of personnel.

No use is to be made of the procedure for reserving bonuses. If an enterprise works well it gets bonuses, if it doesn't, control by the ruble.

The incentives introduced are outstanding in their potentials for awarding the best workers, keeping them at an enterprise and for carefully using labor resources. It will become more profitable for collectives to work intelligently rather than by the number.

#### ITS TIME TO DARE

The transition to the new working conditions is a difficult and exceptionally important matter. It requires dynamism, sober calculations, a creative approach, the use of all economic tools, and all means of educating people. The experiment inspires hopes for improvement where it is in effect. However, this does not mean that it solves all problems and eliminates all bottlenecks. It would be more correct to say that it begins a turn in the needed direction.

It is important for each worker to know the essentials, basic points, requirements and potentials of the new operating conditions. With time, after the initial steps we will move to the massive introduction of these methods. We are faced with the implementation of a complex of measures to perfect production planning and organization and to improve its management structure.

One can not now live by the principle: plan less, but give more bonuses. Both psychological and organizational restructuring are needed. An especially great role in this restructuring is played by the USSR Ministry of the Timber, Pulp and Paper and Wood Processing Industry's Commission on the introduction of new operating methods and the intensification of their effect to accelerate scientific and technical progress. This commission is headed by G. L. Medvedev, a deputy minister. It also includes ministry administrations, the managers of union republic ministries, VPO and enterprises participating in the experiment.

Innovation's success depends to a great extent upon an active position by labor collectives and each worker. Party and trade union committees should give special attention to the organization of socialist competition under the experiment's conditions and help collectives find still unused internal reserves.

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## FORESTRY AND TIMBER

### LAGGING RECONSTRUCTION OF SAKHALIN CELLULOSE-PAPER PLANTS FAULTED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 25 Apr 86 p 2

[Article by N. Smirnov, secretary of the party's Sakhalin Oblast Committee, delegate to the 27th CPSU Congress, Yuzhno-Sakhalinsk: "They Remain On Paper: The Plans for Remodeling of the Enterprises in Sakhalin's Woodpulp and Paper Industry"]

[Text] In Sakhalin's national economy, the woodpulp and paper industry occupies a special place. However, its condition today is extremely alarming. For long years the enterprises have not been re-equipped. Everything, as the expression goes, has been squeezed out of them, and very little has been invested in them.

There was a time when people in the branch were proud of what the Sakhalin papermakers were doing. The enterprises had developed skilled cadres, had established stable collectives of workers, and worker dynasties had appeared. From year to year there was a growth in the volume of production and the quality of the output improved.

But in recent years the development has noticeably slowed down. Disturbed by that tendency, the party's oblast committee attempted not to lose sight of the work performed by the Sakhalinbumprom Association. First of all we turned our attention to the use of the enterprises' own opportunities for their technical renovation. The result proved to be that the timber exchanges and the wood-preparation departments were supplemented with hoisting cranes, continuous-action bark-removal drums, and other machinery, and that considerably reduced the application of manual labor. The paper-making machines were modernized. More productive bimetallic boilers appeared in the boiling shops. At the Poronaysk Woodpulp and Paper Plant and the Korsakov Factory, automated lines for the production of cardboard boxes and the manufacture of paper sacks were activated.

Nevertheless this partial, incomplete modernization and replace of equipment could not compensate for the wear and tear of the fixed production assets, which has reached 60 percent.

Recently a member of the party's oblast committee, worker at the Kholmsk Woodpulp and Paper Plant A. Gavryutina, said bitterly that a few years ago 40



percent of the output of their enterprise was released with the Seal of Quality, but now it is only 3 percent. The plant is getting old: in the past five-year plan the expenditures for capital repair tripled, and there was a corresponding increase in the number of the personnel servicing the plant. There have been absolutely no improvements either in the papermakers' working conditions.

A frank and impartial discussion on this matter was held last year, soon after the April Plenum of the CPSU Central Committee, at the oblast committee buro. The persons who made statements remarked that the technical re-equipping of the enterprises is being carried out in a sluggish manner and un strenuous plans are being drawn up for the introduction of new technology, advanced technological schemes, and the mechanization and automation of the processes.

In a word, we at that time requested the branch department of the party's oblast committee, the appropriate city and rayon committees, and the Communist administrators to eliminate the shortcomings and to reorganize their entire organizing and political-indoctrination work in the spirit of the time. And for themselves, the members of the buro made a self-critical conclusion: at times, in the midst of our current affairs, we were overlooking our basic question -- the problem of cadres.

However, in order to achieve a fundamental turning point -- despite all our demandingness -- people's own efforts obviously are insufficient. Help is needed from USSR Minlesbumprom [Ministry of the Timber, Pulp and Paper, and Wood Processing Industry].

The question arises: are we really to believe that the people there do not know about the situation that has developed here? In the decisions issued by the directive agencies, the question of the fundamental remodeling of our woodpulp and paper industry has been raised frequently. The technical-economic substantiations for that remodeling and the schemes for the development of the enterprises were elaborated. However, the necessary funds were not allocated for the past five-year plan, or for the present one...

We happened to express our concern about the situation at the branch headquarters, personally to Minister of the Timber, Pulp and Paper, and Wood Processing Industry M. Busygin. In reply we heard that the forests on the island have been exhausted, that remodeling will cost a lot of money, and, moreover, we lack a construction base...

Those are serious objections. Obviously, there must be just as serious and responsible an approach to the consideration of these problems.

Let us take the claim that there is a shortage of raw materials. Today the woodpulp and paper industry consumes 2 million cubic meters of wood. But on the island with a computed logging area of approximately 5 million [cubic meters], we fell annually slightly more than 3 million cubic meters of logs. In principle, the need for raw materials in the event of the development of the woodpulp and paper plants can be covered by the local timber resources. That is, one should not talk about depletion, but about complicated it is to carry out logging operations in remote areas and on the steep mountain slopes.

We have such difficulties. But can we complain about the lack of a forest if we are located in the land of the taiga? Adjacent to us, on the other side of the Tatar Strait, in the De-Kastri and Sovetskaya Gavan area, very rich forest tracts are waiting. All that Minlesbumprom -- the owner of the timber raw-materials base -- and the woodpulp and paper plant have to do, as the expression goes, is to pick up an axe! Hauling the wood to the island also does not represent any difficulties, and its cost, as has been demonstrated by computations, will not be higher than that of timber that is felled locally.

Mention is made of the considerable expenditures for remodeling. We agree: the remoteness of Sakhalin causes additional expenses as compared, say, with the European part of the country. But should we use this departmental yardstick to measure the expenditures when we are talking about the Far East? "Our plans for the near and remote future are linked, to a considerable degree, with the assimilation of the natural wealth of Siberia and the Far East. This is a matter of great importance, and we must take a nationwide attitude toward it," the Political Report to the 27th CPSU Congress stated. But if we remember the ruble, then the scheme of technical re-equipping also stipulates profitable alternatives. In particular, by means of the production of such final output as high-grade woodpulp, paper, cardboard, and articles made from them, with sales going basically to meet export needs. The reinforcement of goodneighborly trade relations with the countries in the Pacific Ocean basis is a question in the present-day international situation that is not only economic, but also political.

There is another aspect of the matter that is no less important. The amount of fish being caught in the basin has been increasing, there are not enough corrugated-cardboard packing materials, and they have to be delivered here from Karsnoyarsk and even from Perm. And what we could do if we had boxes! Shipments are made halfway across Russia to the Far East, bringing wallpaper, napkins, paper tablecloths, and other similar commodities. In order to eliminate this awkward situation, the CPSU Oblast Committee and the oblast executive committee requested USSR Minlesbumprom to reorganize the specialization at the Kholmsk Woodpulp and Paper Plant to the production of commodities intended for cultural, everyday, and household use. That would make it possible to increase their production from 3.2 to 20 million rubles. The reply, signed by the ministry, was an evasively "streamlined" one: "It is planned to carry out the work of reorganizing the specialization in 1987-1990..."

And now a few words about the capabilities of the construction workers. The Sakhalinlesstroy Trust is located in our oblast. However, it does not carry out work at the woodpulp and paper plants, because it does not yet have at its disposal a construction-industry base. And yet that base has been under construction since 1975! During that time, with an estimated cost of 2,492,000 rubles, only 1,314,000 have been allocated and used. With this attitude on the part of USSR Minlesbumprom, the base will not be completed any earlier than two five-year plans from now.

In conclusion I would like to return to the point where I began -- today every seventh person in the total number of industrial-production personnel in the

oblast is, by occupation, a woodpulp or paper maker. More than half the timber industry and one-fourth of the coal industry, as well as a considerable amount of transport and energy engineering, operate for this branch. In seven cities on the island, the life of practically the entire population is linked with the woodpulp and paper plants: they give the work and housing, provide the social, cultural, and everyday amenities, and furnish heat, water, and electric energy. Their output is delivered not only for the needs of the Far East, but also for other parts of the country, and also for the foreign market. It is necessary, as rapidly as possible, to engage in the remodeling of the woodpulp and paper plants in the oblast on a modern technical basis.

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